approach

APRIL 1984 THE NAVAL AVIATION SAFETY REVIEW

The University of Michigan Transportation Library

From the Editor's Notebook

By Lt. John Flynn

Requesting Publications

The Naval Safety Center is reevaluating its publications distribution listing. In order for your activity to continue to receive Approach, Mech, Fathom and Navy Lifeline free of charge, write us a letter requesting to remain on the distribution list for the publications you want, how many copies per month you need and how many members of the target audience are in your command. The guidelines are as follows:

Approach — one copy for every five flight operations/aircrew personnel

Fathom — one copy for every 10 surface ship/submarine personnel

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Navy Lifeline — one copy for every five supervisory/safety personnel in industrial-type activities

If there is some compelling reason why these ratios do not meet your activity's needs, include it in your letter. This request must be in writing, but feel free to call us if you have questions. This does not apply to paid subscribers.

Welcome Aboard

We welcome two new writers to Approach:

• Harry "Bud" Baer has a master's degree from the prestigious Columbia University School of Journalism and over 30 years experience in aviation writing, much of it with the Navy.

• Peter Mersky is the co-author of **The Naval Air War in Vietnam** and the author of **The History of Marine Corps Aviation.** His aviation articles, photos and artwork have appeared in several American, British and Japanese publications. He is also an intelligence officer in the naval reserve and a commercial-rated civilian pilot.

Bravo Zulu Submissions

Our Bravo Zulu department contains narratives of incidents where aircrews have solved a particularly difficult emergency situation through exceptional performance. These items are submitted by the commands in which the incident occurred. We need the following on a submission:

• a write-up, about three paragraphs describing the incident and the crew's action

• endorsements from the commanding officer and the airwing

• a 5x7" black and white photo of all the aircrew involved

• any photos available of the actual incident damage to the aircraft, etc. (optional)

Contributor's Guide

This Contibutor's Guide for Approach, Fathom, Mech and Navy Lifeline is free for the asking. This eight-page pamphlet contains tips for writing articles and taking photos for safety publications.

Our Address

Naval Safety Center
Safety Publications Department (Code 70)
NAS Norfolk, VA 23511
Attention: (as required)

D 202.13:29/10

374-A

NAVAIR 00-75-510

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Vol. 29 No. 10

Cover photo by Mr. Gary Giessow of St. Louis, Mo.

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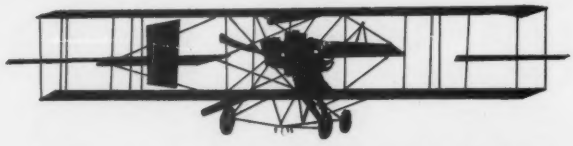

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MAY 17 1984

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Don't Fowl Out!
Part II

or A Naval Aviator's Guide to Not Hitting Birds

By Harvey A. Shultz
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Northern Division
Naval Facilities Engineering Command
Philadelphia, Pa.

LAST month we left poor Cal Rodgers pinned under his Wright aeroplane — the world's first bird-aircraft strike fatality. Calbraith Perry Rodgers was not your basic run-of-the-mill pilot. He was a great, great grandson of the famous Commodore Matthew Calbraith Perry. Socially prominent, he was a member of the NY Yacht Club and was a former Columbia University football player. At 6 feet 4 inches, he was also one of the world's tallest aviators. In 1911, this dashing figure captured the imagination of the entire nation when he became the first ever to fly coast to coast. Leaving Sheepshead Bay, N.Y. on September 17 at an average air speed of 50 mph, his goal was to complete the trip in 30 days and win a $50,000 prize offered by William Randolph Hearst. He became lost the first day, however, when he followed the wrong railroad tracks (the navigation system of the day). On the second day, he crashed into a tree, ensuring that he wouldn't get to California in a month. After extensive repairs, he continued the trip anyway. A subsequent landing site, which he thought was a field, turned out to be a swamp. On another occasion, he shredded a prop on a barbed wire fence and later crashed trying to fly *under* some wires. When he landed in Pasadena, California on November 5 to the cheers of 20,000 admirers, the only original parts left in his aircraft were the vertical stabilizer and the drip pan!

On April 3, 1912, a gull became entangled in the controls of his aircraft while he executed an aerobatic maneuver 100 feet over Long Beach, California. Seven thousand people watched in horror as he plunged to the edge of the surf. It seems ironic that this well-bred, well-educated national hero who had survived so many crashes would meet his end due to a bird strike. Cal Rodgers had no way of learning about bird strikes from others. He was the pioneer when it came to fatal bird strikes. We can try to learn something from his probable mistakes which included inadequate bird avoidance training, inadequate bird lookout vigilance and failure to consider habits of local birds.

Cal Rodgers not only had inadequate bird avoidance training, he didn't have much training of any kind. In fact, he had only been flying for three months when he departed on his cross-country trip! Furthermore, it is difficult to imagine that anybody attempting a "Texas Tommy" in a primitive airplane at low altitude over a beach had any spare time to look for birds. Rodger's lookout vigilance probably was nil.

Unfortunately, such errors are still being made. In addition to lives, the stakes involved in naval aircraft bird strikes also include millions of dollars and important defense missions. But there are positive steps each pilot can and should take to minimize the risk of colliding with a bird.

The pilot's report and the commanding officer's comments found in "General Use Naval Aviation Bird Strike Hazard Reports" and "Limited Use Naval Aircraft Mishap Investigation Reports" speak eloquently on the subject of how not to hit a bird. So let's allow their thoughts to reinforce the main points. (All quotations that follow are extracted from recent reports.)

Almost everyone has heard the world's biggest lie — "the check is in the mail." The world's second biggest lie (known only to a few naval aviators and found only in Bird Strike Hazard Reports) is "corrective action is beyond the originator's capabilty." Sadly, this defeatist attitude can become a self-fulfilling prophecy. And what could the author have meant by, "Due to infrequency of reported bird strikes . . . corrective action is not deemed necessary at this time?" Of course, corrective action is always possible and necessary. At risk are missions, lives and aircraft. The hazard keeps increasing, too, as greater numbers of larger, faster aircraft fill the skies. It is foolhardy to be lulled into complacency because strikes at a particular location have been infrequent or minor. The stakes are too great.

Prevention of bird-aircraft collisions, like baseball, is a "game of inches." A six-inch difference in the point of impact may be the difference between a dead bird and a dead pilot. And keep in mind that one-third of all military strikes involve engines. Any time a bird enters an engine, a catastrophe can occur. Said one hazard report, "Had the bird impacted some other portion of the aicraft and not caused injury to the pilot, this incident would not have been a mishap." That's like saying, "If my Great Aunt Edna had wheels, she would have been a Chevrolet." And if that loon had been a few inches to the left, maybe it wouldn't have killed the copilot of a private jet near Cincinnati in 1983. And if that goose had been a few inches lower, maybe the pilot of that Republic Airlines flight wouldn't have lost an eye. And if those gulls were a few inches higher in September 1981 in Cleveland, maybe the commander of the Thunderbirds would be alive today. Let's keep the word "if" out of our bird-aircraft strike hazard vocabulary. "Corrective action not deemed necessary," indeed!

There are many positive steps that air crews and air traffic controllers can take to minimize the risk of a bird strike. The first is to take a realistic look at the problem. There are no magic wands or ray guns available and the problem will never be eliminated. For years researchers have been looking for aircraft-mounted devices that will repel birds, but the pickings have been slim. The use of wingtip-mounted strobe lights reduced bird strikes marginally according to a study done at the Swiss Ornithological Station. In theory, the more unnatural an aircraft looks, the more likely birds will notice it early and try to get out of the way. The idea is to play the odds and have them on night and day when operating under 10,000 feet. The most successful, proven bird strike reduction methods do not rely on technology, however, but rather on command emphasis, training, good airmanship and resolve.

Continued

Since most birds are found at low altitude, pilots have the law of averages on their side by doing two things (when the mission permits):

1. Minimize flying below 6,000 feet AGL.
2. Avoid bird habitats such as marshes and farms when low altitude flying is necessary.

But strikes occur at higher altitudes, also. In the words of one OINC after a high-flying A-6E struck a bird, "Bird strikes continue to plague naval aviation even at altitudes where one might not expect them. Constant vigilance combined with professional airmanship is the only sure way to minimize the mishap potential."

Nobody ever said it was easy to fly an airplane and watch for birds at the same time. In between the mission, the piloting and the office work (reading maps, checking instruments, keeping records), there isn't a lot of time left for bird-watching. Military missions which require night flying, bad weather flying, wing flying, high-speed flying and combinations thereof don't make it any easier. Compounding the problem is the fact that most strikes happen during takeoff and landing when there is least opportunity for bird watching.

The CO's comment after a CH-53D hit a bird during a troop lift sums this thinking up very succinctly: "Birds will continue to be a hazard to the helicopter pilot. All aircrew members must be constantly aware of this problem and keep a good lookout doctrine. *Nothing can replace the value of several sets of eyes constantly looking for hazards.*"

"Otherwise, how was your day?"

Stated another way after an A-4M pilot experienced a bird strike: "Our best and only defense against the constant potential of bird strikes is awareness of the possibility, professional preflight briefs of hazards and emergency procedures, and good heads-up flying."

Now let's talk about some avoidance and evasion techniques that can save your life. An obvious step to consider when flying near concentrations of birds is to slow down. At speeds below 250 KIAS, chances of seeing and avoiding birds increase. So when speed is not mission essential, throttle down and give yourself and the birds some extra time to react. After all, the birds don't want to be involved in a strike either. And remember, the force of impact is proportional to the square of the speed of the aircraft. At supersonic speeds a duck may do as much damage as a cannon round. By slowing down, the impact force is reduced if a strike does occur. This thinking applies also to taxi speeds.

Another prudent avoidance strategy is to limit formation flying when bird activity is greatest. Wing and interval takeoffs sometimes lead to wingmen hitting birds scared up by the lead. This is a dangerous time for the wingman to encounter birds since he is concentrating on the lead aircraft and little else. When birds make a sudden appearance during a takeoff roll, it is up to the leader to warn the wing. When bird activity is heaviest, it may be safer to depart in trail.

Another important technique is to keep sighted birds in sight. To allow birds to slip into a blind spot is to court disaster. For example, on a UH-1N, the copilot's doorpost, the door and window frames, the windscreen and greenhouse frame and the windshield wiper motor join together in the upper left quadrant of the copilot's field-of-view to create a 113-square-inch trapezoidal blind spot. This blind spot located 12 to 17 inches from the copilot hides an area (given a 125-knot closure rate with an object three seconds from the aircraft) larger than six football fields. Very large birds could easily "hide" in such an area.

If there are a few seconds to attempt an avoidance maneuver and you're not sure which way to turn, just remember that old song, "Clear the Loon," and climb. Why? Because most birds are "programmed" to dive when they are trying to avoid collisions.

Some bird avoidance strategies are so obvious they may not seem worth discussing. But some of the most obvious never seem to show up on hazard or mishap reports. For example, what should a pilot do if he spots a bird 1,000 feet ahead while cruising at 250 KIAS, and no safe avoidance measure is possible with the aircraft being flown? If control can be maintained, the answer is duck! This scenario provides three whole seconds to do something. Ducking under the windscreen may not seem too macho, but it sure beats decapitation or loss of eyesight. Visor discipline won't decrease the rate of bird strikes but it will minimize the consequences. According to one study, 20 percent of all strikes involve canopies. Seven percent are shattered.

If you think the hazard is exaggerated, ask Idaho Air

National Guard pilot Greg Engelbreit. In April 1982, while flying his RF-4C Phantom II fighter at low altitude slightly below the speed of sound, he smashed into a 25-pound whistling swan. The left panel of the windshield disintegrated. Plexiglass ricocheted around the cockpit like shrapnel, carving up everything in sight, including parachutes. Engelbreit was knocked unconscious, his left arm shattered. The navigator (a non-pilot), somehow landed the aircraft after Engelbreit revived just long enough to lower the landing gear flaps and tail hook. Several hours of surgery and transfusions were required to pull him through. He may never have full use of his arm, but his life was saved by his visor.

These kinds of occurrences are by no means rare in naval aviation. On 20 March 1982, while transitioning to a landing configuration into MCAS Beaufort, S.C., a T-2C struck one of 20 birds crossing its flight path. The bird penetrated the canopy above the pilot's head and continued to the bulkhead behind the rear cockpit ejection seat. The PIC (pilot in command) declared an emergency and made an immediate uneventful landing. Said the CO, "A proper down and locked visor precluded serious, facial/eye injury to the student in the rear seat."

On 30 November 1982, a UH-1N en route to MCAS Cherry Point, N.C. took an eight-pound loon through the left windscreen. The PIC stabilized the aircraft at 400 feet, declared an emergency and landed safely. Uncle Sam had to dish out only $529 for repairs, but the pilot was injured and an additional cost of $25,000 in lost workdays was incurred.

On 12 October 1983, the IP (instructor pilot) of a T-34C entering a landing pattern at NAS Whiting Field, Milton, Fla. was struck in the neck by a chicken hawk. A similar strike there six weeks earlier resulted in both pilots being temporarily knocked out. Fortunately, both of these dangerous incidents had happy endings.

Visor discipline is important; it saves lives, eyes and aircraft. If ever tempted to leave a visor up, just remember these words: **a bird in your face is a major disgrace**.

Another method of reducing bird strikes is to emphasize the subject during pre-flight briefings. When blood and feathers were found inside a main wheel well of an A-7E at NAS Cecil Field, Fla. during a preflight inspection on 5 December 1983, the CO commented:

"Episodes of this nature serve as a constant reminder that bird strikes are a possibility in every phase of flight. Pilots/aircrew need to continually brief their actions should a bird strike occur. Bird strike emergency procedures always receive attention during low-level flight briefing while . . . often neglected during briefings on takeoffs and landings. Ironically, the majority of reported bird strike incidents have occurred in airport traffic areas. Although it is impossible to eliminate these incidents, we can take precautions to minimize their effects; i.e., know your procedures, be prepared and anticipate it happening in any phase of flight."

Heed this good advice. Bird strike hazards should be treated like weather during briefings. Just as missions have to be adjusted for weather conditions, they may have to be modified to avoid bird migrations and other concentrations of birds. If bird density is too high, pilots should be briefed to change runways or even fields. The checklist should always include potential problems, evasive actions, engine failure procedures and visor discipline.

On 16 January 1984, a CH-53D collided with a gull while landing at MCAS New River, N.C. The crew was fortunate. The gull remains only got as far as the port nose, gearbox oil cooler and the port engine air particle separator. Undoubtedly, the crew will continue to take seriously the bird strike awareness training provided during the OPEVAL period.

Said one CO after an A-4M hit some birds during a 6 January 1984 air-to-ground bombing run at MCAS Cherry Point, N.C., "Bird strike frequency continues to be high even though the intense migration period has ended. Small non-migrating birds have continued to be a bird strike problem . . . .This hazard should be included in all preflight briefs."

Just as preflight briefings prepare pilots for the "big picture" on bird activity, on-going communication on the subject provides constant update on local conditions. Pilots must talk to each other and to the control tower. The control tower must provide immediate information regarding the movements of birds.

On the night of 11 February 1981, a flock of gulls flew into the path of Otis 10, a KC-130F making a visual approach landing at MCAS New River, Jacksonville, N.C. Multiple strikes were taken on all four propellers, on the lower left portion of the windscreen, on the vertical stabilizer approximately mid-way up, on the leading edge of both wings and on the starboard refueling pod. The remains of 87 birds were found on or about the runway! The corrective action in the hazard report read as follows: "It is recommended that pilots request a report on bird activity when operating in areas where a high degree of bird activity might be expected; for example, coastal regions. It is recommended that the reporting of observed bird activity by pilots be vigorously pursued. Otis 10 was not cautioned of any bird activity. There had been noticed bird activity approximately one hour prior to the arrival of Otis 10."

One thousand birds took to the air as four TA-4s landed at NAF El Centro, Calif. on 15 November 1983. The next aircraft to land, an F/A-18A, struck six birds. Could increased awareness and/or in-flight communication have prevented this strike?

Another potentially avoidable strike occurred on 23

APPROACH (USPS 016-510) is a monthly publication published by Commander, Naval Safety Center, Norfolk, VA 23511. Subscription requests should be directed to: Superintendent of Documents, Government Printing Office, Washington, DC 20402. Requester publications postage paid at Norfolk, VA.

September 1982 when an F-4S flying a full maintenance check at MCAS Beaufort, S.C. hit a bird during takeoff climb. The reporter remarked: "At the time of the strike, multiple aircraft were in the touch-and-go pattern with no reported bird activity."

Transient crews have a special need for local knowledge. When an SH-3D hit a bird during a touch-and-go at NAS Jacksonville on 8 December 1983, the CO said, "The hazards of bird strikes will remain with us. Communication flow between pilots and controllers concerning local bird activity continues to be the best method of transmitting knowledge of a known hazard and avoiding active bird concentrations."

Crews should not be shy, either. By requesting information on bird activity, they remind air traffic controllers to look for birds. On 21 November 1983, an OV-10D aborted a takeoff after rolling through 15 gulls at MCAS New River, N.C. (two dead gulls were found). The CO emphasized ". . . the necessity to query air traffic controllers about bird activity in the local operating area."

The role of the tower in alerting aircraft of hazards cannot be overemphasized. In many cases, published warnings are necessary. On 1 October 1982, a P-3B killed at least 21 birds 10 to 15 seconds after liftoff from MAF Misawa, Japan. A three-engine landing at 114,000 pounds was made after an emergency declaration, fuel dump and burndown. A NOTAM warning was issued.

On 18 January 1984, an A-4F hit one of 30 to 40 black ibises at 600 feet AGL and 230 KIAS during practice bombing. A six-inch hole in the radome and 12 to 14 nicked compressor blades resulted. The recommended corrective action included, " . . . NAS Fallon include the following in the remarks section of the IFR supplement: 'Caution —light to heavy bird activity vicinity airfield. All aircraft use landing or taxi lights while in the airport traffic area.'"

The key is teamwork; ongoing two-way multimedia communication flow will reduce bird-aircraft strikes. Silence is deadly, not golden, when it comes to communications on bird activity.

A classic principle of war is to know your enemy. This is not to say that Navy pilots should become ornithologists, but rather that a basic knowledge of bird behavior — especially migrations, roosting tendencies and daily feeding patterns can help in reducing strikes. This knowledge can be acquired by sharing information and by observation. Seasonal bird migrations are a well-studied phenomenon. Altitudes, flightways, speeds, rates and densities are known. Consult the PIF for VR/IR routes with high densities of bird migration.

On 24 January 1984, an E-2C hit a bird during a multiple touch-and-go at NAS Norfolk, Va. Feathers and remains were removed from the starboard oil cooler duct, the engine air inlet and the forward prop spinner assembly, which luckily were replaced at a cost of only $45.30 and a half a man-hour. In his comments the CO noted that, "as long as birds and naval aviators continue to vie for the same airspace, the chances of collision are ever present . . . ." The suggested corrective action was as follows: "Awareness of nesting communities and large concentrations of migratory birds should allow a naval aviator to avoid the area if possible."

Sometimes the critter whose habits must be understood isn't even a bird. At NAS Cubi Point, Republic of the Philippines, an A-7E roaring through the night on 5 May 1982 during night bombing practice encountered an all too common problem at that location. It was only upon postflight download of an unexpended MK76 that the remains of a large bat (28-inch wingspan) were discovered. The MK76 was on the centerline aft of an MER located on station 2. The explosive charge was not actuated despite a direct hit of the bat's body with its wings extending aft, enveloping the entire bomb. The aircraft suffered no damage. The bat strike probably occurred during a GCA approach or during aircraft climbout after takeoff.

In his comments, the CO stated, "Command has taken measures to avoid flight during the hours of peak bat flying." That is almost an understatement because Cubi Point provides almost a textbook review of many of the points presented thus far. Let's let the Bat Strike Hazard Report dated January 1984 (prepared after a momentary touch and three-engine landing by a P-3B (MOB)) do the talking:

"Postflight inspection revealed remains of a fruit bat in the number four engine air intake against the inlet guide vanes. Subsequent required maintenance on engine revealed no damage . . . . Heavy fruit bat migration occurs in the immediate vicinity of Cubi Point just prior to the rainy season. Bat activity is heaviest at dusk when large groups fly through the airport traffic area to their nighttime feeding

grounds. Cubi tower routinely advises aircraft of any known bat activity taking place in the area. Additionally, aircrews are warned of the hazard by a sign conspicuously posted in the flight planning room and a warning in the en route supplement. This squadron has educated all pilots on the hazard and terminated all avoidable field work at Cubi Point between the hours of 1800 and 1900 local until the bats have departed the area."

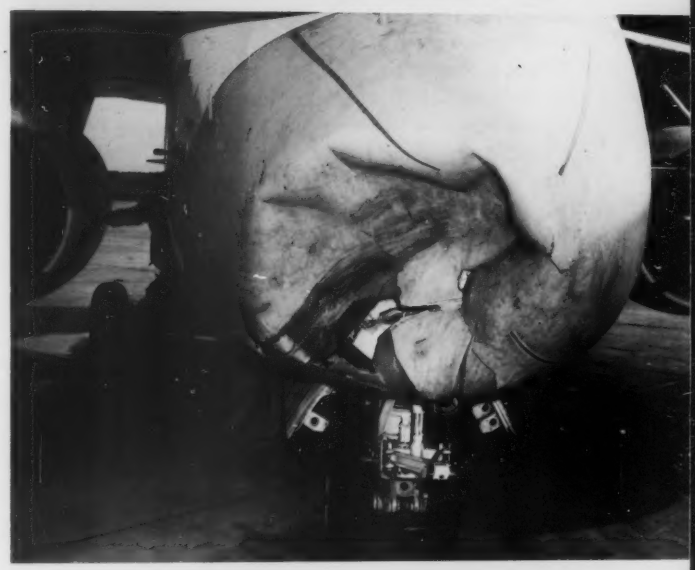
If the object of our attention was limited to just one bird, we would pick the gull. (There are actually 44 species, each with its own peculiarities.) The Air Force notes that 80 percent of all engine ingestions by large birds involves gulls. When a gull was ingested into a TA-7C engine at NAS Miramar, Calif. on 13 June 1983, tentative identification of the debris was made as follows: "Fishy odor and grey and white feathers indicated the ingested bird was a seagull."

Be aware, as the pilot of an A-4M was at MCAS Cherry Point, N.C. on 15 December 1983 when he noted, "During low ceiling and foul rainy weather, large amounts of seagulls are noticed inhabiting the many open fields and grassy areas nearby the airfield. Due to vicinity of the station near many bodies of water, seagulls are a constant threat."

Discretion is the better part of valor after colliding with a bird. The pilot of an F-14A who hit a flock of English sparrows at NAS Miramar, Calif. on 3 January 1983 on his takeoff roll with 10,000 feet or runway remaining did the correct thing, the only thing to do. He aborted. A timely abort prevented this incident from becoming a mishap. Even if everything seemed fine and the instrument readings were normal, he took the prudent course of action.

There have been well-documented cases of seemingly innocuous bird strikes causing serious problems later on. A P-3C II rolled through 100 gulls on 30 December

"The landing was a bit tough but at least we didn't have to worry about bird strikes!"



1983 at NAS Moffet Field, Calif. The takeoff was aborted when birds struck the windscreen and damaged the radome and antennas.

The crew of an HH-46A witnessed an "explosion of feathers" upon takeoff from OLF Imperial Beach, Calif. on 4 November 1983. Feathers were found in the particle collector box of the number 2 engine after a precautionary landing.

Another obvious abort situation developed when a pilot in a F-4S over NAS Oceana, Va. heard and felt a loud thump while descending through 600 feet at 150 knots. An immediate climb with both engines in afterburner was initiated with the port engine at 70 percent. An emergency was declared. After a safe landing, part of a mallard duck was removed from the first hinge section of the forward camp assembly.

Sometimes the need to abort is more subtile like when the crew of an A-6E heard and felt a thud during a low-level navigation/practice bombing syllabus training sortie. Flying at 400 knots in night IMC conditions over the Boardman Target in Pendleton, Ore., they commenced an immediate climb. With all instrument indications normal, they aborted the mission and made an uneventful landing. Postflight inspection indicated that a strike on the starboard intake had FODed the engine.

The final step is for each pilot to integrate and internalize bird strike training and briefings . . . to prepare mentally for any eventuality. After a TA-4J taking off from NAS Lemoore, Calif. struck a bird on 25 January 1984, the CO stated that "a bird strike during the takeoff evolution is one of those events over which the pilot has very little control; the options for evasive maneuvers/alternative procedures are extremely limited. However, the procedures to be followed after the bird strike occurs can be well thought out in advance. Bird migration and nesting in the vicinity of NAS Lemoore is a fact of life. Each pilot must establish and review a 'what if' scenario in order to prepare himself to face the problem."

On 2 December 1983, an AV-8A ingested a bird passing 800 feet on climbout one mile from MCAS Cherry Point, N.C. The reporter noted that "all air crews . . . must form a plan of action, both to avoid bird activity and also what to do in case. Don't wait for an emergency; think about bird strikes now."

Another way to look at the cerebral aspect of bird strike prevention was expressed after an A-7E collided with either a large turkey buzzard or a black vulture on 11 January 1984. It was during landing on a drizzly night at NAS Cecil Field, Fla. that a loud thud followed by a bright flash was observed. The engine was rejected to the tune of $31,536 due to compressor damage. The investigating board noted: "Mishaps of this type can never be totally eliminated; however, their effects can be minimized through proper briefings, bird strike awareness and expecting the unexpected in every phase of flight."

There are times when all of the bird strike avoidance techniques described are inadequate. That's the time to ask for help. When a P-3B hit a bird on 25 October 1982 at NAS Barbers Point, Hawaii, that marked the fourth such incident in less than a week. A local ornithologist was consulted and tentatively identified the problem as migratory golden plover feeding in grass areas next to the runway.

The services of the USAF Bird Aircraft Strike Hazard (BASH) team have, on occasion, been requested by naval activities. BASH has been helpful on several occasions, but their mission, staffing and funding do not permit routine support for the Navy.

The first place to look for help is from the cognizant field division of the Naval Facilities Engineering Command (NAVFACENGCOM). Your Public Works Officer has at his disposal Navy civilian applied biologists working out of NAVFACENGCOM Engineering Field Divisions located at Honolulu, Hawaii; San Bruno, Calif.; Charleston, S.C.; Norfolk, Va.; and Philadelphia, Pa.

When eight collisions between P-3s and gulls occurred at NAS Brunswick, Maine during an eight-week period in 1982, an Engineering Service Request (ESR) was sent to Northern Division, NAVFACENGCOM.

An applied biologist met on-site with air operations personnel and the local U.S. Fish and Wildlife Service specialist. They developed measures to be included in a new bird-aircraft strike reduction plan. The primary purpose of the plan was to identify methods of making flightlines, taxiways, runways and surrounding areas unattractive to birds and to establish responsibilities and coordination.

Northern Division, NAVFACENGCOM, is currently on the distribution list for Bird Strike Hazard Reports. Information is entered there into a computerized bird strike data base. Cognizant EFSs are notified when serious strikes or developing patterns are noted. Coordination has also been established with the Federal Aviation Administration (FAA) and with Navy natural resources personnel who are responsible for land management planning.

Don't play "I've got a secret" with bird strikes. The first step in getting help when needed is to report bird strikes faithfully, completely and accurately. And don't follow the recommended procedures just because OPNAV says so. Because if you don't, the next thing that goes bump in the night could be fatal.

Remember that old song, "Too Close for Comfort?" Well, there is no such thing as a routine bird strike. Implied in each seemingly trivial occurrence is the realization that the difference between a minor strike and a disaster might have been the width of this page. It helps to be lucky, but you've got to be good to be lucky. Luck occurs most often when preparation meets opportunity. So prepare now to prevent bird strikes and to react properly when they occur. ◄

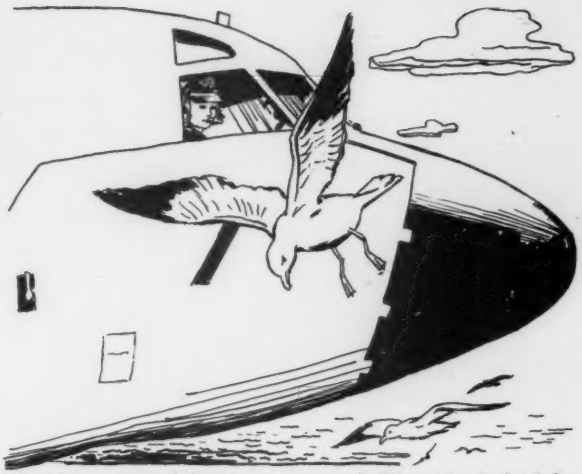
A Flameout or A Striking Resemblance

By Lt. I. Aaron Savole
VP-11

DUE to an upcoming MRCI* our squadron had been scheduling lots of mining practice at the Small Point mining range. My flight was to aid the crew in preparing for this inspection. Preflight was uneventful and we were going to be airborne ahead of schedule to enable us to get in a few practice runs prior to our live drops. After takeoff, with all of our checks out of the way, a discussion in the flight station ensued as to whether we should loiter with an engine shutdown to conserve fuel or not. Small Point range is no more than a mile and a half offshore and a lot of fishermen hang out there. Of course, where there are a lot of fish there will also be a lot of our little feathered fishermen . . . . The dreaded seagulls! Upon reaching the range and going outbound for a run, we could see that there were numerous "flying FOD" in the area.

Our first practice run went well — we were on altitude (300 feet), airspeed (250 knots) and course without having to dodge any birds. Great! If we could keep this up, all mines would go dead-center. We decided to do one more practice run prior to calling range control and performing our live drops. We commenced the second run and departed the initial point, looking good again. Suddenly, just out of the corner of my right eye, I saw this huge seagull passing by the right windshield. Even before I had a chance to take the aircraft from my 2P or yell "lookout!" it was too late. The flight engineer called "we took him down No. 3" as all engine instruments showed a flameout. We initiated an immediate shutdown of No.3 and proceeded with the emergency shutdown checklist. After the initial pucker factor faded, I informed the crew what had happened and asked if they would look for visible damage to the No. 3 engine. None was observed out the starboard windows. I then informed the Brunswick Tower what had occurred and told them that we were going to jettison our practice ordnance before returning to land.

We had eight shapes on the aircraft, four in the bomb bay and four on the wings. Upon activation of the jettison switch all bomb bay stores went, but only one wing store went. We consulted NATOPS and tried every way possible to get rid of those remaining, but to no avail. The only choice left was to call the tower and inform them that we were coming in with hung ordnance. Fortunately, an uneventful three-engine landing followed.

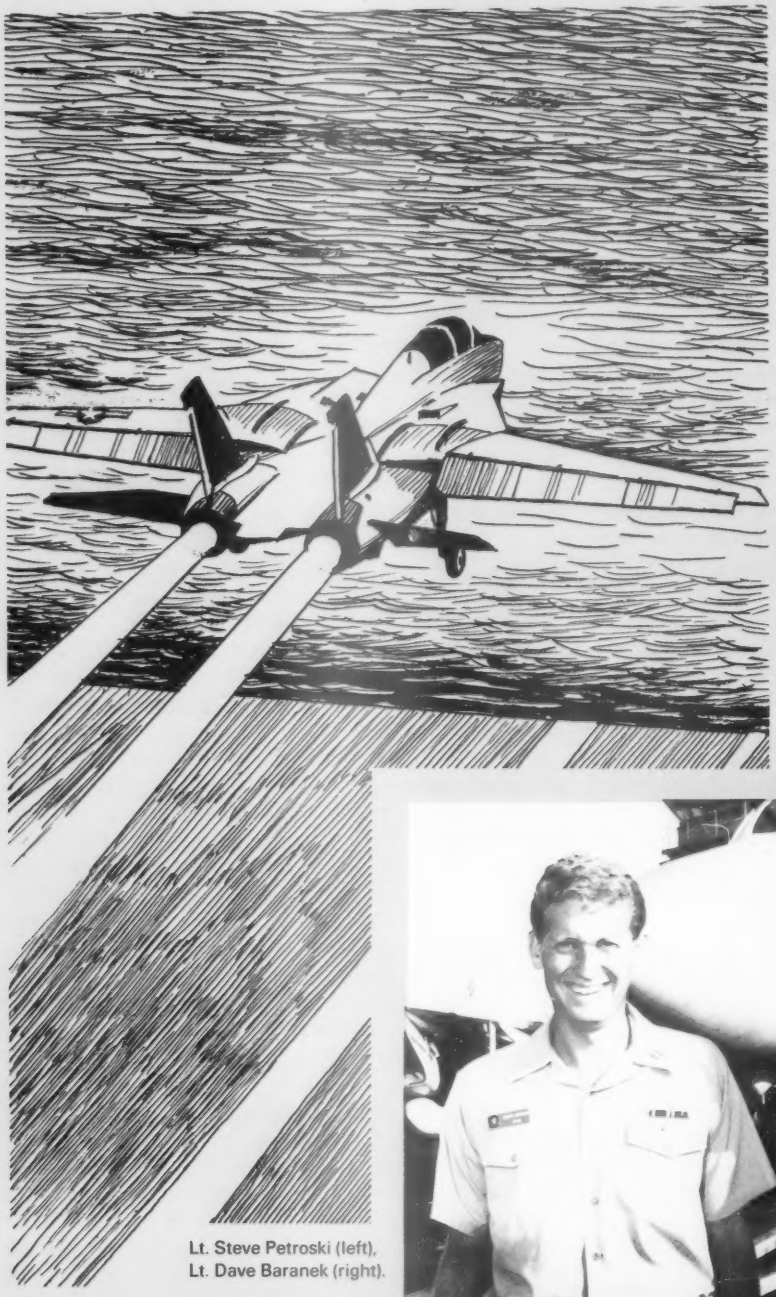


After taxiing in and parking, the ground crew began giving us a signal to cut all power immediately. We complied but couldn't understand why until we looked at the right wing for ourselves. The bird hadn't gone down No. 3 after all, but instead had planted itself in the right wing root and destroyed that section of leading edge which houses numerous wire bundles. Most of the wire bundling which was destroyed was for the No. 3 engine instrumentation, thus the reason for the *indication* of engine flameout.

Fuel conservation is important, but that day I was glad we sacrificed a few dollars per hour and decided not to shut down an engine. Even though it still would have been a safe condition had we loitered No. 1 and lost No. 3, there could have been potential for disaster especially if No. 2 had been lost.

I'm the first to preach fuel conservation, however, next time you see a bunch of our fine feathered friends having a feast on the water and you're going to be down there with them, THINK before you loiter. Remember the boy scout motto: Be prepared! ◄

*MRCI — Mine Readiness Certification Inspection



Tomcat Save. The most potentially calamitous emergency an F-14 aircrew can experience other than a flat spin is an engine failure on the catapult stroke. The inability to abort, heavy gross weight, high outside temperature and large asymmetric thrust all contribute to creating a very hazardous situation. However, this circumstance is exactly what Lt. Steve Petroski and Lt. Dave Baranek were confronted with on 30 September 1983 onboard USS *Ranger* in the Indian Ocean.

On a not so beautiful warm afternoon with numerous showers in the vicinity, Petroski and Baranek manned their Tomcat for an ACM/AIC hop. The aircraft was configured with external droptanks; one AIM-54, one AIM-7 and one AIM-9. The sequence of events preceding the launch was normal. On the runup, with both engines stabilized in zone 5, Petroski saluted the catapult officer and prepared himself for the shot.

Halfway down the catapult, Petroski noticed the RPM on the

Lt. Steve Petroski (left), Lt. Dave Baranek (right).

AIR BREAKS

port engine rolling back. Suspecting an engine failure, he immediately applied full right rudder to counter the asymmetric thrust. Consciously setting the proper 10-degree pitch attitude, an initial settle was experienced but was not severe. The aircraft had a power plants change incorporated which measurably diminishes the thrust available in zone 5 afterburner with the gear handle down. Immediately raising the gear handle provided the additional increase in thrust which enhanced the comfort level of the crew. The crew ascended to a safe altitude while alerting the ship to its predicament.

Having successfully overcome a very hazardous situation, Petroski and Baranek began to examine possible courses of action. By this time the squadron had been informed and representatives were on hand in CATCC to assist. Additionally, another squadron aircraft had joined on the crippled plane.

Attempting to regain operation of the port engine became the first priority. A single-engine approach in an F-14 to the carrier is not the most enviable evolution. Unfortunately, all attempts to restart the engine were unsuccessful.

The concern now shifted to the recovery. About an hour of daylight remained with scattered showers about. The ship prepared for an immediate recovery. However, the aircraft was not set. There were still several thousand pounds of JP to dispose of to attain max trap weight. Through the judicious use of dumping, which took fuel from primarily the right system, and of gravity transfer from the left to right feed tanks, which was slower than anticipated, the aircraft was made ready.

Petroski set up for a straight-in approach to the ship. Backed up by timely airspeed, altitude and VSI calls by Baranek, Petroski flew a flawless OK — no comment approach back aboard USS *Ranger*. An Attaboy and Well-done to this alert aircrew.

Good Deed for the Day. A CH-53A crew heard a bang and felt a thump. Checking for a possible birdstrike, the crew chief noticed mist coming from the left side of the helo. The utility hydraulic quantity gauge showed a decreasing fluid level. The pilot made an immediate turn to the nearest airfield. The indicators showed three landing gear down and locked.

A split-second before touchdown, an unknown aircraft on the tower frequency called, "Fifty-three Echo on final, your gear is up!" Hold everything. What's going on? The CH-53E pulled up. The crew made a quick gear check and sure enough, the left landing gear including strut, wheel and brake assembly was gone.

In a helo, such a problem isn't as critical as it would have been in a fixed winger. Our pilot, now fully aware of the problem, eased it in with a vertical landing while coordinating an immediate shutdown. Damage was minimal.

If the good samaritan in the vicinity hadn't warned our helo, it would have been severely damaged, with possible injuries. The CO summed up the incident succinctly: "Presence of mind and alert action of the other airborne crew to come on the air and warn our pilot points out that aviation is a 'get involved' business."

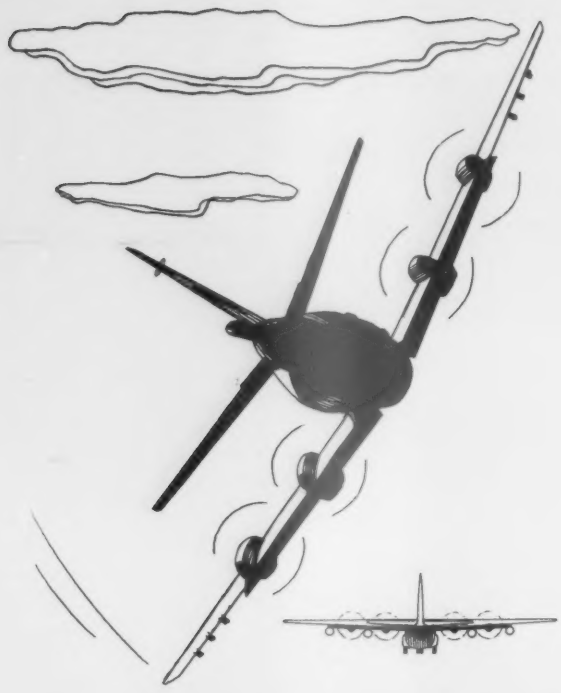
Single Engine T & Gs Out. On a T-39 training flight, the pilot under instruction (PUI) in the left seat was simulating a single-engine landing, starboard engine out, to a T & G (touch and go). After touchdown, as full power was added to the *port engine only*, the aircraft suddenly drifted to the right. On rotation the left wing dropped. The instructor pilot (IP) took control immediately and leveled the wings. Another simulated single-engine T & G and full stop were completed without incident.

On postflight inspection, surprise, surprise: the left rear outboard static discharge wick was missing, and abrasions were on the lower surface of the port wing tip. No internal damage. Only the wing tip assembly required repair. But could this be only the tip of the iceberg?

Drift correction combined with rotation by the PUI caused the T-39 to roll after liftoff with the right wing striking the runway — an unhealthy maneuver. Had the IP not corrected the port roll immediately — perhaps another "Titanic!"

But the training unit's CO came up with an immediate solution, stating: "No more single-engine touch and gos. It has been known for a long time that they do not enhance training but do produce a dangerous situation. A change in NATOPS appears to be necessary and will be submitted soon."

He noted that a simulated single-engine approach can best be done in one of three ways — a single-engine waveoff (no touchdown), a full-stop landing, or "marrying" the throttles and RPM on touchdown and proceeding with a two-engine takeoff." ◄



12

The Student Pilot Pitfall

By Ltjg. Peter J. Riester
VP-17

AS a P-3 passed 300 feet on short final, the tower cautioned of wing tip vortices from a C-130 Hercules. Both pilots rogered the call and continued the descent. Suddenly, the aircraft rolled smartly through 60 degrees angle of bank, a very uncomfortable attitude for an Orion. At the controls in the left seat was a student pilot. His reaction was to let go of the controls and look to the instructor pilot, assuming the instructor would surely handle the problem. The instructor met the stare of the student with a questioning glance as he realized that no one was flying the plane. The instructor quickly added power and applied opposite aileron to get the plane under control.

While performing a turn pattern in a T-34C, another student pilot was intent on impressing his instructor. He kept his head in the cockpit, watching the altitude, airspeed and angle of bank, and failing to notice a second T-34 approaching head on. The instructor did not pick up the oncoming aircraft since the student blocked his forward vision. Luckily, the oncoming plane was keeping an outside scan and maneuvered to prevent a certain midair collision. When he was asked by the startled instructor about the near miss, the student replied, "What airplane?"

After a student completed a touch-and-go at Saufley Field in a T-34C, the tower called traffic at the 10 o'clock position. The instructor said, "I got it," meaning "I see the traffic." The student relaxed and let go of the stick, interpreting "I got it" to mean the instructor was now flying the aircraft. The instructor kept an eye on the outside traffic as the student watched the airspeed drop off to stall buffet. The instructor recovered the airplane with power and nose-down attitude.

Have you ever come off the 180 position and not remembered the winds called by tower? Did you ever say the response to a checklist without actually performing the step? How about only studying the emergency procedures listed on the grade sheet before a flight?

If you can relate to any of these situations or answer "yes" to any of the questions, then you could be a victim of the "Student Pilot Pitfall" which can be fatal. Had the P-3 been in the flare when the vortices hit, the time wasted deciding who had the airplane might have been enough to implant a wing tip on the runway. If both T-34C pilots had been watching the gauges, disaster would have been unavoidable. Finally, if the stall buffet had occurred in an approach turn at low altitude, an approach turn stall may have been disastrous.

The example situations and questions were chosen to stress some important fundamentals of flying. Proper execution of these fundamentals can eliminate the Student Pilot Pitfall. The problem concerning who has the aircraft is common among multipiloted aircraft. Great care should be taken to ensure that both pilots know who is controlling the plane. Along the same line, the pilot at the controls is responsible for handling any immediate emergencies. Granted, the more experienced pilot will normally take control of the aircraft, but until he does, the pilot at the controls must handle the problem. It is dangerous to assume that the instructor pilot will bail you out of all situations.

A proper outside scan is critical for both VFR and IFR flying. Maybe the turn pattern will not turn out perfect but it will be a safe evolution. While flying IFR, do not develop a false sense of security; no one guarantees you a perfectly clear airway.

Poor communication can be a nightmare for aviators who rely too much on brevity. Standardization is paramount for good communication and all parties concerned must fully understand what is being said. Standardization must also be Navy-wide; the lingo used in one aircraft community can have varying meanings for others.

Most importantly, the student, or less experienced pilot, must not give the instructor a halo image. It is unsafe to follow any other human being blindly. Instructors are fallible just like everyone else. A tactful word at the right time may prevent your instructor from overlooking a potentially dangerous situation. ◄

Six minutes to eternity

By Lcdr. Joe Towers
VR-57

IT started as a searing flash. Instantly, an intense explosion of fire erupted throughout the passenger cabin. Fuselage windows ruptured from the overpressure, and glass was taken into both engines. Sensing an explosive depressurization, the oxygen masks automatically deployed — the added source of oxygen only serving to fuel the inferno.

Amid complete chaos, screams of agony were barely heard above the threshold of the outrushing air. The pain was excruciating and rendered the passengers completely helpless as the intense heat began to melt interior plastics, disintegrate upholstery and scorch human flesh.

Stunned from the explosion and overcoming the initial shock, the aircraft commander struggled to reduce the throttles as molten polyester stuck to his skin and exposed the nerve endings. Acute impulses of pain streaked throughout his body. Meanwhile, the overspeed warning began to shriek as the stricken craft accelerated toward its maximum design speed and the ground below.

Without reason, the landing gear extended, and the gear doors were immediately torn off by the airstream.
"The pilot pulled for his life on the yoke in a last, desperate attempt to regain control."

The shocking reality of the smoldering C-9 hulk was nearly impossible to accept. There it was, the U.S. Navy's first Class A mishap of its type, a sobering wreck in the far

corner of a freshly plowed field. The main fuselage had ruptured in several sections with the cockpit completely obliterated, virtually compressed against the upward slope of an irrigation canal. Gaping holes were along the entire stretch of the upper fuselage with sections of aluminum structure having disintegrated from the intense heat. Amid the now gutted interior, the stench of burnt flesh was overwhelming.

The death toll was too grim to think about. Sixty-five squadron personnel and six crewmembers, all dead and now badly burned beyond recognition — except one, a lone survivor who had miraculously escaped from the wreckage and now lay in a coma. Perhaps he would hold some clue.

Postflight analysis of the cockpit voice and flight data recorders were uneventful — except for the last six minutes of flight. The aircraft was climbing to cruise altitude when there was some garbled talk of leaking cargo from one of the pallets and a request for the no-smoking light.

The lone survivor had stated that he noticed fumes, similar to paint thinner, as he went to the aft lavatory. Shortly after closing the door, a loud explosion occurred, followed by intense heat. Fearful for his life, he had crouched down gasping for fresh air coming from the one air-conditioning outlet. That's all he could remember prior to regaining consciousness in the hospital.

A statement from one of the squadron's personnel, who had the fortune of traveling on another aircraft, indicated that he had helped pack a five-gallon container of acetone in one of the cruise boxes, along with a spare NICAD battery and a box of day/night flares.

NAVSUP Pub 505, which clearly addresses hazardous materials for military air shipment, contained the following information:

> Acetone is classified as a flammable liquid that must be stored in a cool, well-ventilated area and properly packaged in a container that is tightly closed to prevent evaporation. As such, it must not be stored near sources of heat, flames, sparks, combustible materials or oxidizing agents. (A flammable liquid is any liquid having a flash point below 100° F capable of giving off a vapor in sufficient concentration to form an ignitible mixture with the air near the surface of the liquid.) Furthermore, Acetone is identified as a "single-daggered" item which requires *operational necessity approval* and must be transported on *cargo-only aircraft. Passengers are not permitted.*
>
> Electrical storage batteries containing electrolyte acid or alkaline corrosive battery fluid must be completely protected so that short circuits will be prevented and must not be packed with other articles.

All such materials listed in NAVSUP Pub 505 must be packed, inspected and certified safe for air shipment. Furthermore, a red-labeled DD-1387-2 (special handling and certification form for hazardous cargo) must be attached when required. This certification must be signed by a formally qualified person with the flight crew making the final determination of acceptance. A review of the required papers at the originating air terminal revealed no such records on file.

Applicable excerpts from the mishap investigation report follow:

"The probable cause of this mishap was the inflight ignition of volatile fluid or vapors that were emitted from an improperly packaged and leaking drum of acetone that never should have been transported. The ensuing explosion and fire quickly engulfed the aircraft interior and rendered both passengers and crew entirely helpless to combat such an inferno. . . . Although the exact source of ignition is unknown, it is assumed to have originated from an adjacent

NICAD battery, contact with electrical wiring under the flooring or a source of flame from the passenger smoking section. . . . Further investigation revealed that the acetone had pooled in the ½-inch deep seat tracks which ran the entire length of the fuselage and apparently had started to saturate segments of the carpet prior to ignition. . . . Impact forces of the crash landing were within human tolerances, but incapacitation or death precluded any type of evacuation.

". . . This is a particularly tragic mishap since it could have been prevented had prescribed regulations been simply adhered to. Furthermore, had the unit detachment applied basic common sense and elementary supervision, this catastrophic loss of 70 lives and a valuable aircraft could have been avoided."

Later, at an impromptu, all-pilot and aircrew meeting, an obviously distraught and fanatical safety officer just couldn't hold back anymore.

"It was by far the most horrible thing I've ever seen. Charred figures slumped over in their seats. Near-shapeless forms clumped together around the emergency exits. My primary duty is to prevent this kind of thing, not investigate it. I must not be doing my job right. This absolutely senseless, careless and ignorant act will now be long remembered as one of the single worst aircraft disasters in naval aviation history. And it was so damn easily avoidable. Doesn't anyone out there read all those safety reports on hazardous cargo? Or have there been so many, all those bright red flags waving in the breeze, that we've all become insensitive to the obvious? Just fluffed-off. Falls into the same rationalization that safety is paramount — until it interferes with operational necessity. No sooner do we begin to educate one squadron then the same stuff shows up on the next flight. And all that crap about fleet commitment and mission requirements. That's great. But there's a right way to get the gear there or pick it up at the destination site. And as for those reps that sign and certify that no such hazardous cargo has been packed, they're just going through the motions. They really don't know what they have. Batteries, flares, explosives, corrosive and flammable fluids, fully inflated tires, unpurged engines and servicing units, compressed gases and paint thinner. It goes on and on. When are people going to stop trying to sneak stuff through — don't they realize that they're endangering themselves? After all, everyone flies on a C-9 some time or another. The whole system of checks and balances just broke down. We really blew it. And even worse, we should have seen such a thing coming." ◄

Editor's Note:

Improperly packaged and incorrectly labeled hazardous cargo is being discovered in naval aircraft with alarming frequency. This fictitious story is a realistic account of what is likely to happen if we can't get this problem under control. The recent emphasis on accountability has helped, but it is not enough. There are still problems in these areas:

- *"Amateur" preparation of cargo for air shipment.*
- *Deliberate inclusion of prohibited, improperly labeled or prepared materials into air cargo rationalized on the basis of operation requirements.*
- *Equipment containing hazardous chemicals that was certified as purged prior to shipment.*

NATOPS Word Scramble

Using the words in the two columns, circle the appropriate letters to spell each term. Words may be spelled forward, backward, diagonally, or up and down. When you are finished, use the remaining letters to find the hidden *NATOPS message.* We used NAVAIR 01-75GAE-1 and OPNAVINST 3710.7K to generate the word list.

	D O S U B A L L Y S D	
	T S M U M I N I M E N	
Abort	H I A T C H A R T S U	NATOPS
ATC	G E A R E G N A R T O	Postflight
Boots	I S P O T A N S U O R	Preflight
Charts	L T B A B I A E N O A	Range
Checklists	F Y X O D F T V W B K	Runway
Coordinated	E I R R E R F O A H L	Safe
Gear	R T O E B R O L Y O A	Syllabus
Gloves	P O S T F L I G H T W	Taxi
I.F.R.	C H E C K L I S T S K	V.F.R.
Minimums		Walkaround

Courtesy AT1 Steven J. Ludwig and AMS1 Thomas J. Eaton, VQ4 Quality Assurance

Who's Minding the Store Syndrome Breeds Midair Collisions

By Robert A. Alkov, Ph.D.
Naval Safety Center

Multicrew aircraft have the most reported near midair collisions. Why? It's not because they're more likely to be reported when other witnesses are in the cockpit. One of the reasons is due to lack of aircrew coordination, involving a failure to communicate among crewmembers and a sense of diffusion of responsibility.

During the first two world wars, only highly goal-oriented single-seat fighter pilots were successful. The only necessity for group orientation was to cooperate with one's wingman. The mystique of the fighter pilot was built around the lone wolf who was highly mission-oriented.

With today's dual-seated fighter aircraft this concept is not valid. Yet today, some aviators are not happy with an assignment to multiseat aircraft. This attitude leads to animosity between crewmembers. Communication in the cockpit suffers. An overly aggressive pilot on occasion might intimidate his back seater into silence.

The selection process for naval aviators favors the goal-oriented individual to the detriment of the group-oriented pilot. The dimension of group orientation has been largely ignored in naval aviation. This hinders cockpit communication and disrupts crew coordination.

When a highly "macho" pilot is paired with a reticent NFO or copilot, especially one of lower rank, the stage is set for disaster. The statement "I'll fly the plane, you just shut up and do your job" has been heard more than once in a cockpit and is certainly no incentive for an individual to volunteer information unless requested. This self-appointed possessor of the "right stuff" tends to ignore inputs even when they're volunteered.

Recently two multipiloted aircraft collided entering the landing pattern in formation. The pilot of the wing aircraft was advised by his copilot three times that he was flying too close to his lead. The pilot ignored the warnings and failed to increase his separation. Finally he collided, causing considerable damage to both aircraft. However, they both managed to land without injury to personnel.

In aircraft with two or more crewmembers, those who score high in group orientation establish warmer, more pleasant working relationships with the others and consequently have better communication and crew coordination.

Studies of cockpit communication conducted by NASA researchers in simulators have shown that crews that do not communicate well perform worse than those who do, but the most important factor is the type of communication. When more information on flight status is communicated, fewer errors are made in systems management (i.e., engines, fuel, etc.) and in misreading instruments.

When the PIC (pilot-in-command) frequently acknowledges inquiries and observations from the other crewmembers, fewer errors are made. Obviously a person that attempts to communicate but gets no response will soon give up trying. On the other hand, an authoritarian may be personally disliked when he serves as PIC, but during an emergency he has no problem taking charge and dealing effectively with problems that require strong leadership.

The use of commands by a PIC resulted in lower errors in the cockpit in the NASA study. But their overuse caused frustration, anger, embarrassment and uncertainty among subordinates. A good balance of goal and group oriented behavior by the PIC is needed. Some leadership qualities critical in competent management are active listening, giving effective instructions, accepting responsibility, communicating decisions and using feedback and positive reinforcement with subordinates. A lot depends on the senior's communication style. An identical bit of information can be communicated to other crewmembers in several ways; for example, "How about checking our three o'clock position?" is better than "Check your three o'clock!"

One unfortunate aspect of group behavior is the tendency of individuals to wait for someone else to take responsibility in emergency situations. This has led to instances where young women have been attacked, raped and even murdered in the presence of a large number of witnesses without any one coming to their aid. Everyone waited for someone else to take action.

Similarly in flight, the more people involved in the air and on the ground, the more likely the aircrew is to think that someone else is minding the store. This leads to the so-called "positive control syndrome."

NASA did a study that found a greater risk of collision when aircraft are under positive control. Of course, aircraft are more likely to be under positive control in dense traffic situtations, thus more susceptible to collision, but there is still an element of diffusion of responsibility present. Pilots assume that ATC (air traffic control) is going to keep them separated even in VMC (visual meteorological conditions), while controllers expect pilots to "see and avoid." Everyone assumes that someone else is in control. This leads to lowered vigilance.

For example, when two multipiloted helicopters collided in the landing pattern, the crew of the overtaken aircraft was described as being complacent by the AMB (Aircraft Mishap Board) in that they felt they were safe in their own airspace and the tower would maintain their separation from other aircraft. The crew of the overtaking aircraft was no doubt relaxed at returning to home field after performing difficult confined area landings. In addition, there was some degree of "get homeitis" as they were behind their lead and attempting to catch up.

As automation takes over more cockpit chores, pilots may tend to let their guard down and let the computer fly the aircraft. This could lead to lowered vigilance on the part of air crewmembers.

In our flight training program, more emphasis should be placed on management training in group communication and crew coordination. This could help considerably to alleviate these problems.

Use of lectures, self-study and role-playing would improve the communicative process among naval aviators. Similarly, they could practice these skills in simulators to enable the transfer of this important skill to an operational environment. Such techniques should decrease midair and near midair collisions. ◄

Editor's note: Dr. Alkov is the human factors psychologist for the Safety Center. A former naval aviator, he is also an experienced civilian pilot. He has been a frequent contributor to Approach.

Hell Bent, Hot Air and Hydraulic Fluid

THE S-3A was set to launch from the beach on an operational mission. At 0730, the airframes (A/F) day check supervisor (PO1) was reviewing daily cards from night check's daily/-turnaround. The Viking's No. 1 hydraulic reservoir was reported to be indicating 5.8 gallons (should be 3.5 gallons). He dispatched an A/F troubleshooter to verify the No. 1 reservoir's status. The troubleshooter reported that the gauge did indeed read 5.8 gallons and that the fill-drain lever was not safety-wired. The shop supervisor informed maintenance control of the two discrepancies and **was told that they were aware of the problems but did not want work done on the aircraft since it was due to launch shortly.** *(Incredible! The No. 1 hydraulic system is the system with all the utility subsystems on it. If something is amiss, ascertain the details before leaving the chocks.)* The supervisor sent a troubleshooter to safety-wire the fill-drain lever to "keep a close eye on the aircraft during start and system checks."

Preflight and start were uneventful. Unknown to the A/F supervisor, the launch coordinator (CPO) and pilot decided to postpone wing spread and flight control checks until after the S-3A had been topped off in the fuel pits. After leaving the pits, the pilot attempted to **spread the wings** *(one of the utility subsystems).* The No. 1 hydraulic pressure dropped from 3,000 psi (normal) to 100 psi, and the wings failed to move. The troubleshooter and launch coordinator had no success in resolving the problem, so the A/F supervisor was summoned. The supervisor quickly determined that the problem was air in the No. 1 system. He sent A/F personnel back to the shop to get the equipment required to purge

"Nice watch . . . what kind is it?"

and properly service the No. 1 system. Before A/F personnel returned, **the launch coordinator determined (contrary to the A/F supervisor's recommendation) that repairs would take too long and had the aircraft shut down and towed back to the line.** A/F personnel hooked up a hydraulic Jenny to the aircraft, purged and serviced the No. 1 system in 10 minutes. This corrected the discrepancy.

Numbered among the errors, oversights and miscalculations associated with this incident are:

1. The aircraft had been **serviced with an empty hydraulic** servicing unit, thereby putting air, not hydraulic fluid into the system.

2. The plane captain, launch coordinator and pilot-in-command **failed to respond properly** to the overserviced indication on the hydraulic reservoir gauge.

3. The A/F troubleshooter assigned to "keep a close eye on the aircraft" **did not have sufficient knowledge or experience** to diagnose properly the cause of the wing spread failure.

4. The launch coordinator **failed to give the A/F supervisor's diagnosis** and prognosis sufficient weight when determining whether to abort the launch or wait to affect repairs.

Nohydraulicfluidmouse

Here it is again. A situation in which an unbroken string of errors continued almost to the point of catastrophe. Too often, as in this case, we allow ops, manning levels, time of day) to dictate the quality of our performance and control our actions.

Paramount among the errors found in this evolution, we have an aircraft being serviced by personnel of questionable qualification with little or no supervision. Secondly, we have a plane captain, flight crew and launch coordinator so intent on launching an aircraft that written instructions, maintenance manuals and common sense were all forgotten. Last, but by no means least, we have a maintenance control so intimidated by a flight schedule that even after being made aware of a downing discrepancy on two separate occasions, it still wanted to launch the aircraft.

The players in this incident were governed by technical publications that, if followed, would have stopped this evolution before an aircrew and aircraft were placed in jeopardy: the MESM (mission essential subsystems matrix) for maintenance, the MIMs (Maintenance Information Manuals) for the workers, NATOPS for the flight crew.

It is imperative that each of us involved in aviation become familiar with, use constantly and follow the guidance provided by the publications

ANYMOUSE

available to us. We must not allow the ever-present external forces to cloud our judgment or dictate the caliber of maintenance we perform.

Deviations from written procedure have, can and will lead to disaster.

Supervisors Need to Set The Example

I was notified that a student wash crew was using our wash rack. None was wearing goggles. Yet, the night before, a student on the wash rack had received chemical burns to his eyes from the washing solution containing Turco. He had to be transferred to the naval hospital. Another instructor and I proceeded to the wash rack to observe the situation. Upon arriving, there was a crew of six men washing an aircraft. One man on top had a cranial helmet on but no goggles. One man on the deck had goggles on. The remainder, including the supervisor, had neither on. We proceeded around the aircraft for a complete view, then to QA to report the situation. Back at the office we received a call from the supervisor on the wash job. He asked why we were spying on them; that they had enough problems without us trying to run their line. He said he could tell people to put their goggles on, but if he turned his back and they took them off, there wasn't anything he could do about it. First, considering what happened the night before, we were watching out for the welfare of our students, not spying. Second, why should anyone think they should wear proper safety gear if the supervisor isn't even wearing it? There are numerous safety reports on this situation, and most of us can quote incidents involving the adverse effects of chemical burns from Turco. Although training is frequently held on the subject, the situation still exists. Proper training starts with a supervisor who impresses his subordinates with the proper safety procedures and equipment and at the same time SETS THE EXAMPLE! In situations like these we cannot afford to learn from our mistakes. Complaints exist about the "I don't care" attitude common among lower rated personnel, in particular, the line division. This can only be stopped by referring to the starting point — the supervisor. Proper safety doesn't take time — it makes it.

Icaremouse

"Spying? Who me?"

Roll Those Dice

WHEN is it OK to fly a down aircraft? The answer is apparently "Whenever you can convince your ISIC it would be inconvenient not to!" Outlandish statement? Consider the facts.

A LAMPS det went hard down for a large oil leak on an engine. No spare was aboard, so how do we get the helo back up? Simple, get a "one time flight" authorized to get to a shore station. All the players in the chain blessed the idea, and the helo was flown ashore without mishap. What is amazing is that the ship pulled in just two hours later to offload the people to change the engine! Why did the flight crew take a chance on a down helo when a no-risk crane-off evolution was just as easy to set up? Why did the squadron and wing approve this? I guess you pay your money and take your chances. How would this evolution have looked if it was written up as part of an MIR? Roll those dice.

Whoarewekiddingmouse

This letter adds fuel to the adage that the most hazardous evolution in naval aviation is the end-of-deployment fly-off!!

"Those decision makers must have an oil leak in their brain gears!"

Metric Minima

By Capt. Gale E. Clouse, Jr.
USAF

Special Metric Minima Notice. Ceiling, visibility and RVR minimums may be depicted in meters on approach plates for some overseas locations. The pilot should see the same information on the instrument approach procedure that is used in air-ground communications at each location.

Scene: A crew inbound to Rhein-Main. The copilot remarks, "Frankfurt is reporting a ceiling of 900 feet and an RVR of 2,500 meters. Hey, I wonder what the meters convert to in good ol' American feet? Are we above or below minimums? Do we need to divert or something?"

"Copilot, engineer. The field is above minimums. By the way, we don't have to make conversions anymore. The minima block at the bottom of the approach plate now has the RVR and prevailing visibility in meters. At some locations, the ceiling may also be shown in meters in the weather block. That's what the (flight crew information file) item was about and it's in the book legend, too. As usual, you pilots never seem to get the word."

While this pilot was finally getting the "word," we hope you haven't missed it. The purpose of the change to meters is so that aircrews don't have to consult a meters-to-feet conversion chart to determine if a field is above or below minimums when meters is the way the airport reports weather to aircrews. On final in the midst of changing weather conditions isn't the time to worry about metric calculations.

History. In the 28 October 1983 Europe, North Africa and Middle East (ENAME) approach procedures, you'll see the ceiling, runway visual range (RVR) and prevailing visibility (PV) are published in meters for some locations. In fact, the ENAME approach books have contained the new depictions since July 1983. First suggested in 1975, the idea of using metric minima was put into effect just this year. The Army, Navy and Air Force agreed to the concept of metric minima for designated DOD instrument approach procedures in June 1982. The change to metric minima is being implemented worldwide to align the depiction on DOD approach plates with what is used in air-ground communications at each location. All flight information publication (FLIP) documents depicting landing minima will incorporate these changes as they're revised. Approach plates for the U.S., Canada and other nations are not expected to change to metric minima since aircrews flying in these countries don't get ceiling/visibility reports in metric terms.

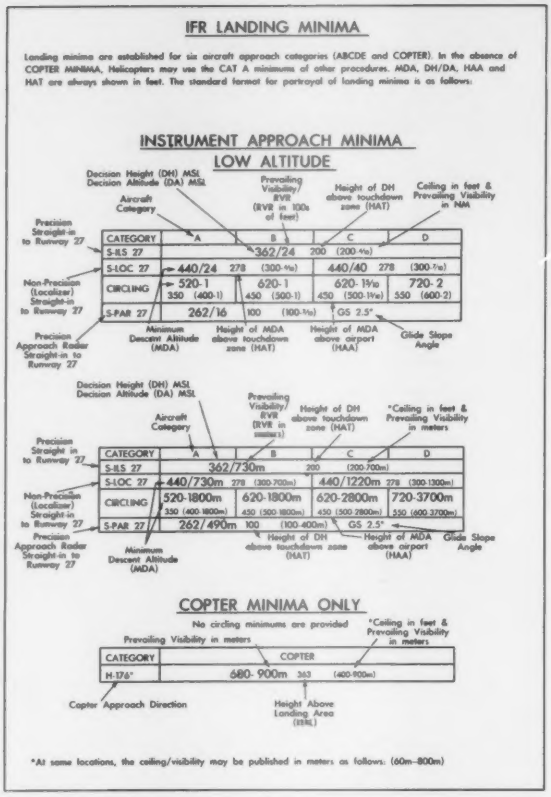


Figure 1. Landing minima as depicted in FLIP approach plates.

What you hear is what you get!

Terms. In case you're a little rusty on approach minima, let's review some of the terms:

Ceiling — the height above the airport elevation of the lowest layer of clouds or obscuring phenomena that is reported as "broken," "overcast," or "obscuration," and not classified as "thin" or "partial."

Visibility — the ability, as determined by atmospheric conditions and expressed in units of distance, to see and identify prominent unlighted objects by day and prominent lighted objects by night. Visibility is reported in statute miles, meters or feet.

Prevailing Visibility — the greatest horizontal visibility equalled or exceeded throughout at least half the horizon circle, which need not necessarily be continuous.

Runway Visual Range — an instrumentally derived measurement that represents the horizontal distance a pilot will see down the runway from the approach end; it is based on the sighting of either high intensity runway lights or the visual contrast of other targets, whichever yields the greater visual range. RVR is horizontal visual range, not slant visual range and is based on what a pilot in a moving aircraft should see looking down the runway. RVR is used in lieu of RVV and/or PV in determining minimums for a particular runway.

These are only a few definitions. You may want to see FLIP for more.

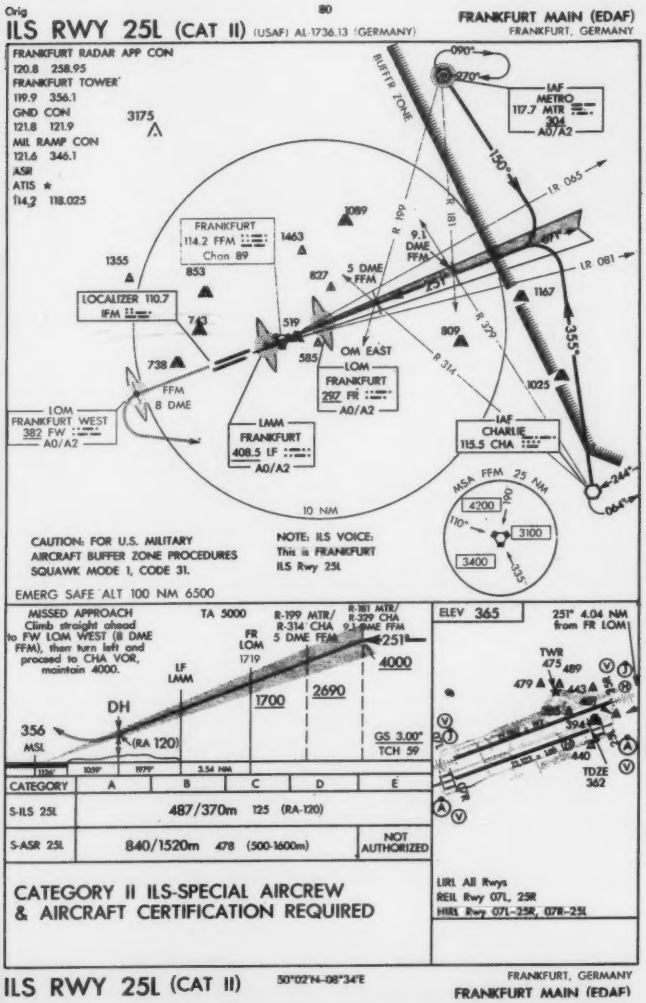
Away From Nautical Miles. The major change in Europe is that prevailing visibility is now expressed in meters, not nautical miles. In addition, RVR is now being shown in meters at many locations in Europe. In some cases, the RVR may be in feet, with PV in meters. You'll still normallly see ceiling depicted in feet in ENAME, although FLIP allows it to be shown in meters.

Review. In figure 1 we show how landing minima are depicted in FLIP instrument approach procedure books. Some helpful hints to remember are: (a) look for the lower case "m" which stands for meters; (b) at some locations, the ceiling/visibility may be published in meters as follows: (60m-800m); (c) MDA, DH/DA, HAA and HAT are always shown in feet.

Conclusion. As with any instrument approach, safety consciousness starts with understanding what is portrayed on the approach plate. A lack of understanding of instrument approach depictions, on the other hand, can not only be annoying — it can also be potentially disastrous. Also, listen closely to the weather terms used.

Well, you've passed your review with flying colors. Now how about figuring that weight and balance in kilos?

Adapted from the MAC Flyer


Orig
ILS RWY 25L (CAT II) (USAF) AL-1736.13 (GERMANY)
FRANKFURT MAIN (EDAF)
FRANKFURT, GERMANY
FRANKFURT RADAR APP CON
120.8 258.95
FRANKFURT TOWER
119.9 356.1
GND CON
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MIL RAMP CON
121.6 346.1
ASR
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114.2 118.025
BUFFER ZONE
IAF METRO 117.7 MTR
FRANKFURT 114.2 FFM Chan 89
LOCALIZER 110.7 IFM
OM EAST
LOM FRANKFURT 297 FR
LOM FRANKFURT WEST 382 FW
LMM FRANKFURT 408.5 LF
IAF CHARLIE 115.5 CHA
5 DME FFM
9.1 DME FFM
FFM 8 DME
CAUTION: FOR U.S. MILITARY AIRCRAFT BUFFER ZONE PROCEDURES SQUAWK MODE 1, CODE 31.
NOTE: ILS VOICE: This is FRANKFURT ILS Rwy 25L
EMERG SAFE ALT 100 NM 6500
MISSED APPROACH Climb straight ahead to FW LOM WEST (8 DME FFM), then turn left and proceed to CHA VOR, maintain 4000.
TA 5000
R-199 MTR/ R-314 CHA 5 DME FFM
R-181 MTR/ R-329 CHA 9.1 DME FFM
DH
356 MSL
(RA 120)
ELEV 365
251° 4.04 NM from FR LOM
TWR
TDZE 362
CATEGORY A B C D E
S-ILS 25L 487/370m 125 (RA-120)
S-ASR 25L 840/1520m 478 (500-1600m) NOT AUTHORIZED
CATEGORY II ILS-SPECIAL AIRCREW & AIRCRAFT CERTIFICATION REQUIRED
LIRL All Rwys
REIL Rwy 07L, 25R
HIRL Rwy 07L-25R, 07R-25L
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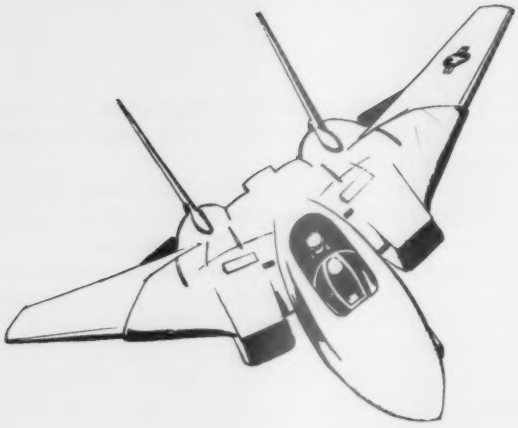
FRANKFURT, GERMANY
FRANKFURT MAIN (EDAF)

Help on the Way



By Bud Baer
Approach Writer

DURING a night air intercept mission, an F-14 was directed by air intercept control to return to the carrier an hour before normal recovery time due to possible fog formation.

The Tomcat began a tight turn back toward the carrier and commenced a descent from 22,000 feet to 2,500 feet assigned. The pilot reported a fuel state of 13.0 — 6,900 over the max for a carrier landing.

At 23 miles, the pilot checked in with approach control. He was given the final bearing, altimeter and instructed to continue descent to 2,500. He estimated the time needed to dump excess fuel at two minutes. He was given another heading and told to report at 20 miles.

One minute later, he was assigned another heading, a speed of 300 knots, and told to advise control when dumping was complete. He acknowledged.

At 20 miles out the pilot asked permission to perform a 360. It was approved.

Two minutes later, approach control requested an inbound report. It was not acknowledged. Radar contact was lost.

The search continued throughout the night. Early in the morning, debris was sighted 45 miles from the carrier — a large piece of vertical tail section and a piece of a shredded life raft. A motor whaleboat was launched to pick up the wreckage. The only item found of the crew was an American flag velcro patch. No evidence suggested an ejection attempt. By early afternoon the next day, the search and rescue effort was terminated.

Analysis of the voice tape and the plot of the Navy Tactical Data System indicated a flight path that was neither straight nor controlled. It suggested, rather, that some hard maneuvering was done at high speeds. The record shows three complete heading reversals from the time of recall to the final transmission. When coupled with the rapid descent and the lack of a horizon or visual cue, this could readily have led to symptoms of vertigo.

Investigators who analyze naval aviation mishaps literally rack their brains to determine what happened and why on mishaps like this. Only then can effective steps be taken to try to prevent future such mishaps. Although this can't save the crews of the mishaps under investigation, some things may be learned and some actions taken to assist others still in the air. In this particular case, help is on the way.

It was recommended that the causes and insidious effects of vertigo and spatial disorientation under instrument conditions should be studied more intensively as part of the aircrew deployment training program. More frequent refresher courses on the effects of and prevention of vertigo and spatial disorientation should be scheduled on a yearly basis rather than triannually. The physiological effect of hard maneuvering at night under IFR conditions should be incorporated within initial and periodic aviation physiological training. Already the Aviation Physiology Curriculum Management Office is in the process of preparing new and improved instructions on vertigo and spatial disorientation.

Another potentially positive result of this very negative incident concerns a new technology which may have helped save the F-14. It's advanced controller equipment called CATCC/DAIR (carrier air traffic control center/direct altitude and identification readout).

The Tomcat's unusual maneuvering and deviation during its final descent went undetected by the CV approach controller. Had the plane's deviations occurred during a *normal* (vice *random*) approach, this would likely have been detected because the controller can reference both speed and spatial relationship to other aircraft. The fact that the deviation went undetected was not considered unusual under the random approach since the controller had to watch a wide sector vice the marshal stack, and aircraft are not evenly spaced until about the last 10 miles.

Had the deviations been detected in this instance, the controller may have been able to question the pilot concerning the maneuvers and avert the catastrophe. CATCC/DAIR, an advanced form of air traffic control, may have spotted the deviations since it provides continuous altitude readout and speed to the controller. Controllers are trained to warn pilots when ususual flight paths occur.

All electronic aids available to both aircrews and controlling personnel do not excuse an aircrew from flying the aircraft and executing the instrument approach in a safe, professional manner. CATCC/DAIR is one controller aid that may help preclude this type of incident, however, and it should be installed in all CVs at the earliest possible time.

Heads Up for VERTREP!

By AD1 Bob DePoutot
HC-6

THOSE of us in the H-46 community are intimately familiar with VERTREP operations and the multitude of hazards present during these demanding evolutions. However, we often become so proficient at what we do that we tend to become casual about the importance of doing all the little things properly both prior to and during the mission. In other words, we *assume* that each mission will proceed smoothly like the one before. This is usually when our old nemesis "MURPHY" steps in and says, "If something can go wrong, it will." The following incident is offered as a prime example.

Aircraft HWO2 of HC-6 DET 06 was one of three H-46 Sea Knights involved in a massive ordnance download from a CV to an AOE. The flight crew consisted of two pilots, a veteran crewchief with over 1,000 hours in model, and a relatively inexperienced trainee, who was actually in the hellhole at the time of the mishap. Just prior to the mishap, the crewchief had cautioned the trainee not to expose any more of his body over the hole than was absolutely necessary while a load was on the cargo hook. Fortunately, the trainee followed his advice. As he was directing the pilots during a lift of two 2,000-pound bombs, the cable sling assembly failed. The sudden release of two tons of weight caused the cable eyelet and pendant/leg assembly to whip violently up into the hellhole, striking the crewman squarely in the forehead and face, momentarily rendering him unconscious. Subsequent medical examination revealed a minor concussion and several minor facial cuts with no severe or permanent injuries, due primarily to the fact that he was wearing his helmet properly (chin strap fastened/visor down), and he was properly positioned in the hellhole. The impact on his helmet cracked the visor housing and shattered the visor (see photo).

There are several important lessons that can be learned (or relearned) from this incident:

1. VERTREP procedures are part of the team concept; if one crewmember is doing something unsafe, the other crewman should say something to correct him.

2. The flight helmet gets uncomfortable after an hour or two in the hole, and the temptation is great to raise the visor to catch the breeze. Don't do it with a load on the hook! Switch off with the other crewman periodically.

3. Minimize body exposure over the hole. Had the crewman in this incident been lying across the hellhole, he could have added fractured ribs (or worse) to his injuries.

4. Know all the procedures, equipment and hazards associated with VERTREP. The NWP-42, NWP-14 and H-46 NATOPS are gold mines of pertinent information.

5. Be alert! Fatigue and boredom can be our worst enemies. When we least expect it, everything turns to worms. Remember, using your equipment properly and adhering to NATOPS procedures will go a long way in helping you to reach retirement. HEADS UP IN THE HOLE! ◄

Are You a Flying Druggie?

"Fly on drugs?
Do you think I'm crazy?
Of course I don't do that!
Only dummies
would do a delta sierra
like that!"

By Cdr. V.M. Voge, MC, USN
USAF School of Aerospace Medicine

"Drugs" — what does that word mean, anyway? We all know that amphetamines, cocaine, LSD, PCP, marijuana, etc., are all drugs. But do you really know what a "drug" is or what it can do to your abilities?

First of all, a "drug," according to Mr. Webster, is "a substance used as a medicine or in making medicines," among other things. Think about that. That means that your Alka-Seltzer, your Cepacol lozenges, your Vicks cough drops, that Bufferin you just popped to take the edge off that nagging headache, that sleeping pill you took last night, the Contac you took for your "chronic sinus" trouble, and yes, even your daily vitamin pill are all drugs. This is not to mention just about everything the doc may prescribe, be he your friendly flight surgeon, your wife's obstetrician/gynecologist or the civilian guy you use on the sly. To talk about all the possible drugs you could use and what they'd do to your bod would require tomes. The biggest problem in our community is the OTC (over-the-counter) drug. These are the ones you can buy at the grocery, the discount or the drug store without a prescription. People tend to think that, since these drugs can be bought without a prescription, they can do no harm. Wrong! So very wrong! OTC drugs can be every bit as dangerous to you as the more sophisticated prescription drugs. Let's look at a few of the very common ones:

Aspirin (ASA or acetylsalicylic acid): Bayer, Bufferin, St.

Joseph's, Ecotrin, Meásurin, Alka-Seltzer, Anacin, APC, Ascriptin, CAMA, Cope, Excedrin, Empirin, etc., etc. We all use good ol' ASA for our headache, our fever, our aching bones, the flu, the "chills," our sore leg or arm or back or head, etc., and it does a good job. In fact, aspirin is probably the best non-narcotic all-purpose pain reliever we have. But it also has a few nasty little side effects, at normal dosages, that can make it dangerous for you. It can cause stomach bleeding, even if you've never had an ulcer. It can decrease your night vision; make your blood clot less easily; and cause drowsiness, allergic reactions, runny noses, heartburn, nausea and vomiting. Not so good, you say. You want to try Tylenol instead? Okay, here goes.

Acetaminophen: Tylenol, Datril, Nebs, Anacin-3, Phenaphen, Tempra, Arthralgan, Parafon Forte, Percocet, etc., etc. This drug can make you drowsy; just what you need during an already long flight or for a 0100 launch. It can also cause allergic reactions, impaired thinking and impaired concentration. We really don't need any more aircrew members suffering from these last two maladies. Not so safe as you thought, is it? You must also remember that most of the side effects we will talk about are insidious; i.e., they sneak up on you without your being aware that they are there.

Okay, what about that nagging cough you have, left over from a cold or from all those "coffin nails" you've been puffing on? Some OTC cough syrup won't hurt, will it? Try again! A lot of the OTC cough syrups have dextromethorphan in them: Benylin, Romilar, St. Joseph's, Cheracol-D, Dristan, Endotussin, Formula 44-D, Hold, Pertussin, Robitussin, Vicks, etc., etc., and this includes many of the cough drops that a lot of us eat in place of candy. Probably the most insidious side effect of the drug is drowsiness, but you can also be the proud recipient of such side effects as allergic reactions, dizziness, nausea and indigestion. If you take too much of this "good thing" (i.e., it didn't work the first time), you may become euphoric (super happy), overactive, or feel as if you're intoxicated.

Another drug that's found in most cough medicines is guaifenesin or glycerol guaiacolate. Like its buddy, dextromethorphan, it can cause drowsiness, allergic reactions, nausea and indigestion. This makes most cough preparations a double "no-no" for flying.

"Okay Doc, but I've got this 'chronic sinus' problem. I'm coming down with a cold, but I'm not sick yet — just this runny nose. In fact, this runny nose is driving me nuts! How do you expect me to wear my O_2-mask when I'm drowning in my own swimming pool?!" Actually, you're right! We don't expect you to fly with a runny nose. That's what "down chits" are for. Let's clear up a myth here: There is no safe decongestant for flying. One just doesn't exist. Period. Drugs such as Allerest, Contac, 4-Way nasal spray, Sinubid, Sinutab, Triaminic, etc., are dangerous to fliers, their primary constituent being phenylpropanolamine. Their expected side effects include nervousness and insomina, but they may also cause headache, dizziness, nausea, vomiting and a rapid heart rate. It has been known to cause something as serious as an acute temporary mental derrangement (psycotic episode). Now, that's scary! You thought decongestants were supposed to make you sleepy? You're right, some of them do. These usually contain chemicals such as phenylephrine or chlorpheniramine, as does Dristan, among other.

Is caffeine a drug? You betcha! Is it bad? You betcha! Have you noticed all the soft drink manufacturers advertising no-caffeine everything? We get most of our caffeine in the form of coffee, tea, chocolate, cola and other soft drinks. We all know that caffeine is a stimulant. That's why many of us can't get up in the morning and face the rising sun until we've had out first "fix" of the day. We all know it's addictive, right? If you don't, try going "cold turkey" with no coffee for 48 hours! People with heart disease or stomach ulcers should never use it. What effects does it have on you? Well, it causes nervousness, insomnia, and increased urine output. If you drink a couple of cups before your next flight — it'll clean out the ol' pipes and test your willpower at the same time. It can also cause headache, irritability, lightheadedness, a feeling of drunkenness, impaired thinking, nausea, heartburn, indigestion and stomach irritation. No, I don't think this one's for you either. No wonder so many people are trying to kick the caffeine habit nowadays. At least, you may not want to indulge during pre-flight, — but maybe after landing, though, to "settle your nerves."

We won't talk about nicotine. You surely have heard enough about the dangers of smoking so that we don't have to dwell on this subject anymore. One interesting piece of trivia, though. A drop of pure nicotine placed on the skin of a laboratory rat will kill it. Enough said.

Well, that about covers the most widely abused OTC drugs in our community. All drugs are "unnatural" chemicals in the body. They usually hang around for about four to six hours, sometimes more and sometimes less. Many have "rebound" effects after the effects of the drug wears off. A couple good examples of this are a super "low" feeling after your last dose of caffeine wears off, or an extra stuffy nose after the effects of the decongestent wears off. These rebound effects may actually be more dangerous than the effects of the drug itself.

Is there any "safe" drug — any drug that is safe to fly with? Probably not. Periodically, we will hear from this flight surgeon or from that buddy about this great new drug that you can fly with because it has no side effects. That flight surgeon or buddy is probably mistaken in 99.99 percent of the cases. Sure, some of you may be flying with medication prescribed "legally" by your friendly flight surgeon. But, whenever he allows you to fly on any medication, he's taking a calculated risk. He's already observed you on the drug for a period of time before giving you your "up-chit," and he has assured himself that, if you are experiencing any side effects, they are minimal. Drugs are just another stress factor — another straw that hopefully won't break the camel's back.

Lcdr. Stew Schreckengast (left),
Lt. Alex Sabol, right.

Lcdr. Stew Schreckengast
Lt. Alex Sabol and crew
HM-16

Lt. Alex Sabol, PIC and Lcdr. Stew Schreckengast, copilot, with a crew of five took off in their RH-53D from the USS *Coronado* (AGF 11) while deployed in the Indian Ocean. Their mission was an airborne mine countermeasures (AMCM) mechanical sweep training flight. Brief, preflight, turnup and takeoff were normal. Forty minutes after takeoff, 14 miles from the ship, in a 50-foot hover streaming the AMCM sweep gear, the No. 1 engine chip light illuminated with no secondary indications. Schreckengast was in the right seat at the controls. In accordance with NATOPS, Sabol recycled the appropriate circuit breaker. The No. 1 engine chip light returned immediately and within seconds the No. 1 engine experienced a sudden and complete power loss, accompanied by one loud bang. Due to the aircraft's high gross weight and the high-density altitude, single-engine hover was not possible and water entry was imminent. Schreckengast positioned the nose to the landing attitude, pulled full up collective to cushion water impact, and transmitted a mayday to the ship. During the descent, Sabol pushed the engine speed control levers full forward and notified the aircrewmen on ICS that the aircraft was "going in the water." At the time, all five aircrewmen were in the aft cabin area standing with gunner's belts attached. Upon notification of the emergency they attempted to brace themselves for water impact. At impact the aircraft undercarriage and ramp were substantially damaged, and two crewmen received minor cuts and bruises. (Further injuries may have occurred had it not been for the pilot's ICS transmission.) Immediately after impact, although his ICS cord had been disconnected, AMH1 Woods installed the tow wire guillotines on the sweep gear and signaled the

AMH1 Woods

BRAVO ZULU

other four crewmen to move forward in the cabin. As the crewmen moved forward, they quickly readied the Mk-7 raft for use if the decision to abandon the aircraft was made. Meanwhile, in the cockpit, Sabol jettisoned the external auxiliary fuel tanks to reduce gross weight. The aircraft immediately became airborne and Schreckengast stabilized it in a low single-engine hover. Having regained ICS communications, AMH-1 Woods reported the guillotines installed and ready for firing. Sabol armed and activated the guillotine switches, severing the tow wire. Schreckengast performed a single-engine transition to forward flight, returned to the ship and executed a single-engine approach to the spot and landing.

Sabol, Schreckengast and all crewmembers displayed remarkable airmanship, professionalism and crew coordination in this critical situation. Their efforts were directly responsible for saving a valuable aircraft and preventing serious injury or loss of life.

Ltjg. Joseph Schartung, VP-24
Ltjg. Michael Christopher, VP-24
Ltjg. Lilia Ramirez, NAF Mildenhall

QUICK thinking and valuable training helped Lieutenants (junior grade) Joseph Schartung and Michael Christopher of VP-24 and Lilia Ramirez of the Naval Air Facility at RAF Mildenhall to save a dying man's life.

The three naval officers were riding through Cambridge, England in Ramirez's car when they observed a pedestrian collapse on the sidewalk. Ramirez stopped the car while Christopher and Schartung rushed to the fallen man's side. They checked for breathing and pulse; both were nonexistent. After soliciting help from the gathering crowd, the two lieutenants commenced cardiopulmonary resuscitation (CPR). They virtually breathed new life into the unknown man. Ramirez ensured an ambulance was on the way, and the man was eventually taken to a nearby hospital in Cambridge.

"Because of the Navy officers quick response, Mr. Charles Cutter of Chesterton, Cambridge, survived a massive cardiac arrest," according to Dr. Michael Sharpe, Mr. Cutter's physician.

Christopher is a pilot and Schartung is a naval flight officer on the P-3C that was at Mildenhall overnight from its deployment site in Keflavik, Iceland. They are members of VP-24 home-based at NAS Jacksonville, Florida. The lieutenants had CPR training at the Naval Academy and again during flight school. ◄

Ltjg. Joseph Schartung (left), Ltjg. Michael Christopher (right); Ltjg. Lila Ramirez's picture was not available at press time.

Making Detachments Last the Whole Deployment

By Lcdr. G. Pat Tierney
Naval War College

Last night in the Arabian Sea, Detachment 10 had a mishap. You sit stunned in your easy chair, 10,000 nautical miles away back at homeguard. The first cup of coffee won't help today. As you rifle through the morning message traffic for more details, you mentally review 10's formation, work up and short cruise. They had some good people who tried hard, but they, like most of the rest, were rushed through their training cycle. The OINC returned from his work up frustrated. Tempers flaired on occasion. Some JOs could have used more flight time. Quiet discussions went on in the front office about their status. You know, you were there. But like most of the detachments before them, they passed their readiness inspections, were blessed, kissed goodby and sent back to sea.

There it is, the initial report; poor weather — they rolled off the deck while landing — aircraft lost at sea — two missing, presumed drowned. Your heart slides into your stomach.

How do you impress a group of hard charging, dedicated young men to look out for themselves when they climb on a ship and depart over the horizon for six months or more? Slowly, your mind begins to focus on the core of the problem. The squadron must overwhelm them with the right impressions before they leave. They must carry with them enough impressions to last the whole deployment.

Surely a strong, positive, safety-conscious, command attitude ranks first on the list of solutions, but the effort that really counts falls under the purview of the Safety Observer. He, more than anyone else, should teach the skills, create the attitude and develop the team that will last the whole deployment.

In HSL and HC aviation, "Safety Observer" is usually the final stage of a pilot's operational flying career. Most post-OINCs will find themselves bestowed with this honor; yet the passdown for this mission often lacks the details needed to establish and control a permanently safe-at-sea flying environment. Assuming safety responsibility for a brand new detachment with a never-been-tried OINC (usually junior to him, but not always) and a ship that probably hasn't worked with a helicopter in a long time requires some unique and demanding professional skills. The title is a misnomer. Though technically called a Safety Observer, he plays the part of a ground school teacher, an instructor pilot, an air advisor to the ship's CO, a counselor and big brother to the new OINC and a squadron CO's or Wing Commodore's direct representative. (On the west coast, Safety Observers work directly for their squadrons; on the east coast, they represent the Wing Commodore.)

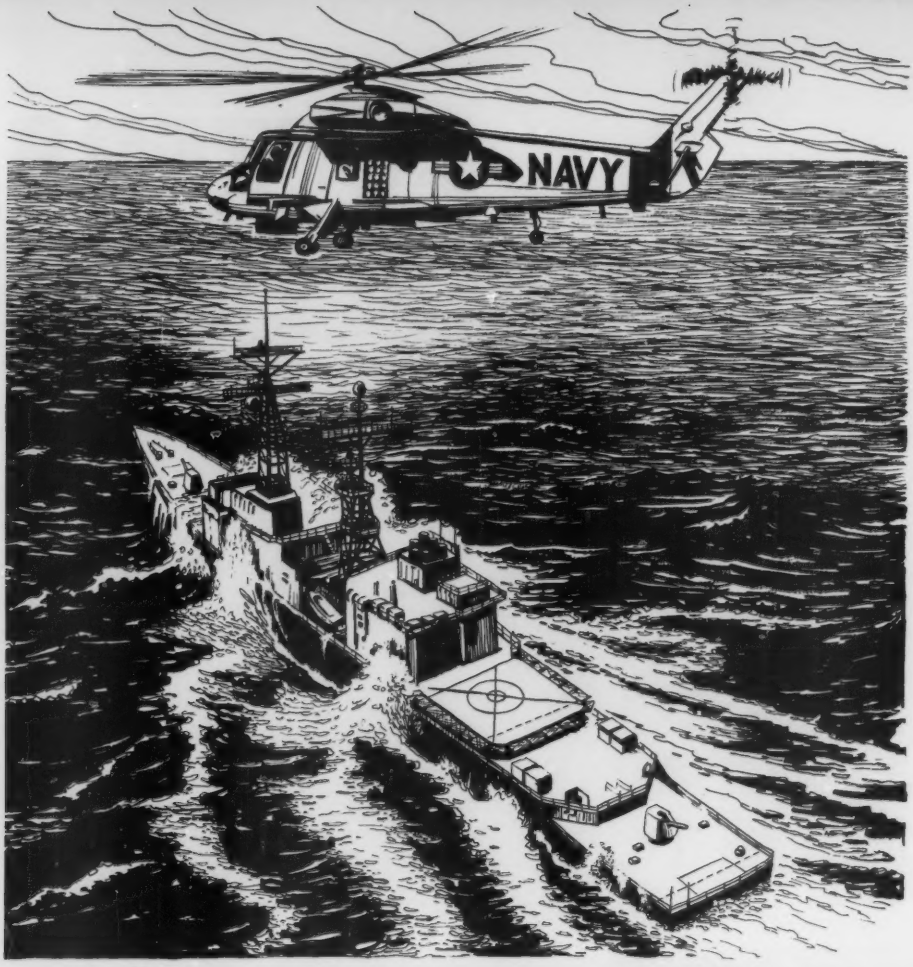
The following is a psychological checklist of those unique skills to help the new Safety Observer understand his position and maintain better control of the work up short cruise.

Authority — you are the ultimate authority on safe air operations. The ship's crew will not always understand the gravity of their new aviation mission. They, as you, will be tempted to cut corners. If an evolution is unsafe, go to the CO, look him in the eye and say clearly, "Captain, this is dangerous." Most COs will grasp your meaning instantly. If he doesn't, you or the ship CO can always cancel a launch, but both must concur to execute a launch.

Conviction — be convincing in your stand on safety. Call it professionalism, pride, the will to be a winner or whatever works, but stand by it like a rock. Avoid the temptation to belittle NATOPS, NWP-42 or wind envelopes to gain favor or get on with the evolution.

Sanctity of the Brief — encourage them to be simple and often. Before your detachment gets underway, ensure it briefs all OODs, all CIC teams (especially in LAMPSOPS), all crash and flight deck crews, all tower personnel and the ship's CO and XO. Often people are left out. Offer your assistance to the OINC for this. At sea, daily briefs to all flight and flight support personnel are an essential survival tool. The new air detachment must develop and support inviolate lines of communication within the ship.

Example — show respect to both chains of command. Since your new OINC must learn to work for one boss operationally, and yet another for administration and safety, you must set the example for this often politically difficult



undertaking. Never allow yourself to play one against the other. Your new OINC must be made to understand that the ship CO is his ultimate operational and tactical leader at sea, but at the end of the deployment, he will answer to both men.

Patience — aviation has no room for short tempers. You are the most experienced man aboard in a complex and dangerous operation. Painstaking planning and detailed briefs will eliminate some problems, but expect people to make mistakes. Scolding, especially in public, will only hinder your efforts. Remain calm in the face of flight deck or bridge confusion.

Perspective — the detachment is only one part of the ship combat or support systems. Attitudes and examples are important in detachment integration. Encourage your OINC to talk to the chief engineer about his evaporators, and the chief supply officer about his inventories. Discourage a we-they relationship from forming between the detachment and the ship. Eventually, that detachment should consider itself the air department.

Autonomy — let the OINC run his own detachment. As a former successful OINC, don't allow yourself to run or set policy for that fledging new detachment. Advice is one thing, directions and orders are quite another. Be meticulously clear when dealing with detachment personnel.

Unity of Purpose — be in consonance with the ship CO. A ship gets many "observers" that it doesn't want or need. At the outset go to the ship CO and explain your purpose and attitude. You are the safety representative of your squadron CO (or Wing Commmodore); report directly to him. You can offer your expertise to help train or correct OODs, CIC, tower or flight deck personnel, but only if the ship CO prefers. Usually they prefer and are set at ease by your asking. Advise, recommend, but don't direct; be meticulous on this point, too.

Discretion — don't wear out your welcome. If the cruise goes well, at some point you must step back and allow the OINC, the new "air boss," to run his own show. If you deem flight operations to be safe, stop looking over shoulders. Go down to the wardroom and drink coffee.

Report Integrity — closing the loop. Upon completion of your mission, debrief your OINC and the ship CO. Then sit down with your squadron CO. Include your OINC, if possible. Be straightforward and honest about the safety of the new ship/air team. If the detachment or ship are not ready for extended flight operations at sea, then say so, clearly and distinctly. Praise them for what they did well. The squadron CO will rely heavily on your opinion, and it will be the foundation of the new, building relationship between the OINC and the squadron CO. ◄

LETTERS

Flight Deck Gloves Needed

San Francisco — On the flight deck a large number of injuries are the scrapes, cuts, bruises and pinches normally absorbed by the hands. The CO of our CV has made gloves part of the complete flight deck uniform, a very savvy move that is backed by everyone.

However, when we went to supply, we got black leather gloves that turned your hands black, welder's gloves, telephone lineman gloves and "one size fits all" leather gloves that fit no one. Most were too thick and the sailor's solution was, of course, cut off the fingers.

The best gloves we have seen so far are soft brown leather gloves sold in the ship's store. Catch-22 rules apply, and we cannot get approval from the ship to open purchase them because we have plenty of gloves onboard.

It should not be this difficult! We have standard boots, jerseys, life perservers and goggles. Why don't we have some standard gloves? Am I looking in the wrong places or are we deficient in some equipment? If we are, is somebody working on it?

Lcdr. C.P. Finney
ASO, HS-8

• We were not able to find an immediate solution to your problem other than getting open purchase approval for the gloves you want. Hopefully, we will hear something from our readers on this. — Ed.

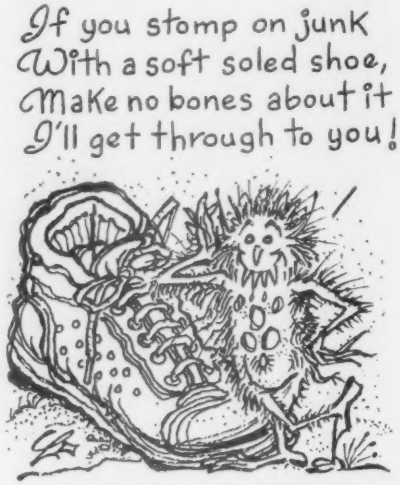
The Deadly Shoe

Norfolk, VA — As safety officer of a squadron with no aircraft (only small boats and drones), management of losses takes on different perspectives. Surviving night traps in F-4s and F-14s, getting blown over the side, burned, sucked into intakes and blown to pieces aren't the squadron's major safety hazards as they were in the fleet outfit I just came from — at least not as much. The killers that lurk in the shadows are complacency, driving home safely, industrial safety violations, tennis shoes . . . TENNIS SHOES!? WHAT? Let me explain.

An ATCS in the squadron was working on a home project, sweeping up after a room addition when — OUCH!!, he stepped on a roofing nail. It wasn't rusty, and he *did* have a tetanus shot (most ATCSs eat nails for breakfast anyway). Sooo . . .

Two days later, with a swollen and aching foot, the ATCS checked into the dispensary and was administered antibiotics. A few more days passed with no improvement. In fact, he was limited in even getting out of bed.

He then checked into the naval hospital, and with some accurate information from his wife (she is an RN), his problem was diagnosed. Why all the pain? It was finally diagnosed as "acute osteomyelitis" (bone infection). He spent *six weeks* in the hospital, where at times he had good chances of losing his foot.



The kicker here is — the bone infection was caused by a particular bacteria strain (one of the many that causes osteomyelitis) normally found in tennis shoes! No kidding. Tennis shoes are normally bacteria cultures anyway.

No one knows whether he would have suffered nearly as much if he were wearing his standard "black" or "brown" shoes, but it really makes you wonder! THE DEADLY SHOE . . .

Lt. Ray Tranchant, USN
VC-6 Safety Officer

• All shoes are equally dangerous with regard to bacterial infections, and it is common for injuries of the type described to be resistant to first line antibiotics. The danger in wearing tennis shoes is that the soft soles are easily punctured by sharp objects. As everyone in the Navy should already know, only safety shoes should be worn in industrial type environments. That would include many home improvement situations.

Capt. G.A. Vasquez, MC, USN
Aeromedical Division Head
Naval Safety Center

Re: C-1A Oxygen Impasse (Anymouse Nov '83)

FPO New York — An anonymous letter in the Nov '83 Approach stated that Mediterranean C-1As do not have oxygen systems, yet operated above the 10,000 feet MSL CNO limit for unpressurized no-oxygen aircraft. In mid-1982 that issue was raised at a COMFAIRMED Mediterranean Safety Conference. The response from COMFAIRMED was twofold. One, restate CNO policy and firmly support the Commanding Officer VR-24 in prohibiting C-1A flights above 10,000 feet MSL; two, fully state the problem to COMNAVAIRLANT, requesting installation of an aircrew oxygen system in the VR-24 C-1A aircraft.

With the full backing of COMNAVAIRLANT, COMNAVAIRSYSCOM and NARF Jacksonville, a C-1A aircrew oxygen system was designed, approved, funded and installed in four VR-24 C-1As by November 1983.

I cannot comment on events prior to mid-1982, but can say that once the C-1A oxygen issue was raised in public forum in 1982, it was tackled and resolved expeditiously and IAW Navy directives.

Cdr. Allan Junker
COMFAIRMED Safety Officer
Naples, Italy

Lip Service to Safety

Kingsville, TX — Safety is continually being touted as our most important product, our number one mission . . . but it appears to be our least supported program. When the idea of a Quality Assurance (QA) Division was brought out years ago, it was looked upon as a real pain in the backside. Our top people were *not* assigned to QA, but it was being used as a dumping ground for our non-performers and malcontents. Today, any good squadron assigns its top shooters to QA. The definite, positive aspects are realized by all levels of command. It's time to stop treating the safety department the way we did QA 10 to 15 years ago.

If safety is really important to your squadron, why is it the ASO must pull teeth to get a safety petty officer? When he finally does get him, he finds out he has been "let go" from his last three billets. Why is it so hard to schedule an enlisted safety council only to have it canceled for a first class meeting called by the XO or CO?

In some squadrons, due simply to numbers of available bodies, the entire safety department is one, or if you're lucky, two officers. If you find your squadron in this position, instead of assigning your new O-4 or senior O-3 to run this "one man band," put your most experienced, most highly thought of department head to the billet. He knows everyone and because of his seniority, is listened to. The same logic applies to your safety petty officer.

Lcdr. Michael P. Jarina
Training Air Wing 2

Mishap Free Flying . . . What's the Secret for Success

By Capt. Kenneth A. Stansell, USMC
HML-167

RECENTLY, our squadron commemorated 10 years of mishap free flying. As we paused to recognize this significant event with the usual speeches, cake-cutting ceremony and photos, I thought of all the people who had contributed to this achievement over the years — the different COs, XOs, ASOs, (aviation safety officers) pilots, crew chiefs and maintenance personnel who left their mark on the squadron. As the squadron's new ASO, I wondered what "magic ingredient" had somehow managed to link together these individual contributions and enable the squadron to achieve such a record. Suddenly it all seemed clear. No, it didn't come to me in some exotic dream or from a ghost of "safety past." Instead it came to me from an article I read in the September 1983 issue of Approach and from a comment made by my CO.

The article, "Watch Out for Number One," written by Lcdr. Paul H. Hederstrom, VA-52, addressed the topic of safety records and awards. Of particular interest was his mention of "momentum" and "winning streaks." He stated that "safety maintains no momentum in and of itself." This seemed to immediately destroy my theory that momentum had played a role in my squadron's safety record. A comment made by my CO reinforced this idea that safety had no momentum when he stated that our record of 10 years and over 64,000 mishap-free flight hours was difficult to comprehend until you thought of it in terms of flying one hour, mishap-free, 64,000 times in a row. This made me realize just how fragile this record really was! Any one aircrew could have failed to fly their one hour safely; any one maintenance personnel could have failed to have followed proper maintenance procedures. In short, any one of those individuals who contributed to the safety record could have ended it just as easily. So much for the momentum theory.

Perhaps it was just luck that our squadron had managed to achieve this record of mishap-free flight time. However, for some reason this idea didn't sit well with me either. That would be tantamount to saying that we simply rolled the dice with every flight and somehow managed to keep the winning streak alive. Everything about this theory bothered me since all of us know that even the longest winning streaks must end sooner or later. A loss in our business is more than just one game; it's somebody's life and a valuable aircraft. No, I definitely didn't like the idea of winning streaks and lady luck. I'd be a fool to discount luck entirely but I knew a lot more was involved.

I kept going back to the Approach article and the idea of momentum when finally it really did seem clear to me. Hederstrom was right. Safety doesn't maintain any momentum in and of itself, but this is not to say that some form of momentum does not exist within a squadron, particularly a successful one. It exists in many ways. It is present in the pride and dedication of the administrative personnel, in the technical knowledge and workmanship of the maintenance personnel, and in the professionalism of the pilots and crewmembers. This momentum is perpetuated when new personnel check in and are made to feel a part of the team, a winning team. It is maintained in the quality of the training they receive and in the examples which are set for them by others.

There really is no "magic ingredient" for success when it comes to safety. The 10-year safety record needed to be put into perspective for all squadron members. Everyone had to realize that everything we had accomplished was now just a thing of the past. They needed to be reminded of just how much work, dedication and professionalism were going to be needed to achieve our next safety goal — our next one hour of mishap-free flight time. Only then would we be able to work on doing it another 64,000 times in a row. ◄

Have Crash Kit, but will it Travel?

By Lcdr. D.R. Mills and Lt. Biff Scott
VR-58

HAVE you thought about this question lately? Probably not. It's a subject most of us would rather not ponder . . . particularly those individuals who daily dare the skies in their flying machines. But, it's real, and when an aircraft crash occurs in your squadron, all must be prepared.

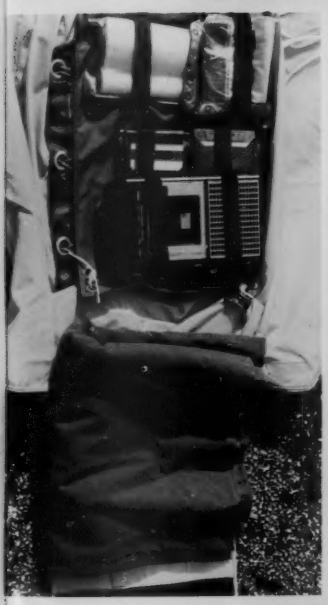
Under ideal conditions your aircraft picks a runway to crash on, allowing you to simply load your typical cruise box crash kit into the back of the duty vehicle and drive up to the mishap site. However, if the aircraft has the misfortune of going down in the badlands, you must be able to get to the site quickly and with the necessary equipment. In the majority of instances the duty cruise box crash kit is far too large and clumsy, negating the mobility of a functional crash kit. The need for carrying necessary equipment to a remote area on foot is evident.

One answer to this problem is the standard government-issue backpack which is obtainable through the Navy supply system. The individual compartments of the crash kit are put together by your squadron rigger and enclosed in a vinyl or canvas cover that is subsequently attached to the pack frame. The weight and bulk of the kits should be equally divided between two packs, and all articles should be clearly and permanently marked as part of the crash kit. Obvious marking of all articles is necessary. This would preclude an article, misplaced at the crash sight, from being mistakenly included as part of the wreckage (or even a causal factor).

The days of the 400-pound crash kit that collects dust in the corner of the safety office must come to an end. Slowly, we have added items to the crash kit in an attempt to make it all-encompassing. This had resulted in most crash kits becoming far too large for realistic operations. The need for a portable crash kit cannot be disputed; the ability to take the necessary articles in to a remote site on foot is mandatory. It could mean the difference between life and death for the people involved in the crash, and even if no one survived, being able to accurately assess the crash site and wreckage immediately following a mishap could provide clues as to why the incident occurred. This information could prevent additional accidents, saving valuable aircraft, and even more importantly, lives. It's not a pretty thought — but an important one. Be prepared! ◄

Editor's Note: For those commands who would like a ready-made kit similar to this one, the Army has a good one. Order: Tool Kit, Army Aircraft, Crash Investigation, NSN 5180-00-903-1049.

KIT 1
KIT 2



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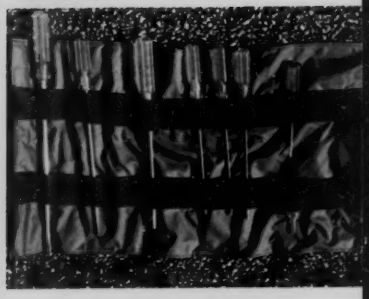

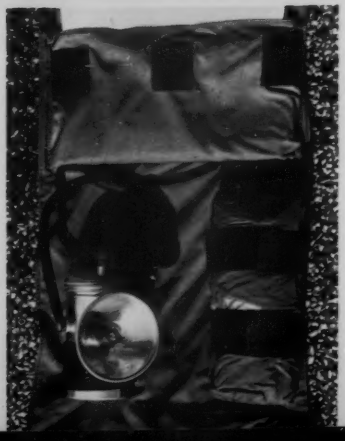

YOU WRITE THE CAPTION!

Photo by PH3 R.D. Feary

This was one of those rare occasions where you wished someone had a camera, and someone actually did. Send us your captions and we will print the best ones in a future issue. These have already been submitted by our staff:

1. "Any landing you can swim away from is a good landing."
2. "Here's the plan; We wait 'til the tide goes out and call a tow truck."
3. "I wonder if this island's inhabited?"

Send your entries to

Approach Magazine
Naval Safety Center
NAS Norfolk, VA 23511